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THE UNIVERSITY OF ALBERTA

Employer Validation of Employment Survival Skills for Entry-Level Occupations: Implications for the Vocational Preparation of Persons with Mental Disabilities©

by

©

Horst Heinrich Mueller, MA

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY
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(Special Education)

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA
FALL, 1988

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled EMPLOYER VALIDATION OF EMPLOYMENT SURVIVAL SKILLS FOR ENTRY-LEVEL OCCUPATIONS: IMPLICATIONS FOR THE VOCATIONAL PREPARATION OF PERSONS WITH MENTAL DISABILITIES submitted by HORST HEINRICH MUELLER in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Educational Psychology (Special Education).

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Dated: JUNE 28 1988.

Dedicated to my mother and father,
who have waited long enough.

ABSTRACT

As more vocational habilitation programs focus their efforts on preparing mentally disabled persons for employment in competitive work settings, the question of which skills to include in pre-employment curricula becomes increasingly important. The purpose of the two investigations reported herein was to examine this question by surveying employers in eight entry-level occupations commonly open to individuals with mental disabilities.

In Study One, 241 employers completed the Employment Survival Skills Inventory.(ESSI), which listed vocational and work-related social skills derived from the vocational habilitation research literature. Respondents were asked to select one occupation and then rate the importance of each.listed skill for success in that occupation. Half of the employers were asked to complete the importance ratings for the average worker in the selected job, whereas the other half were to complete the ratings for a mentally disabled worker. The individual skill statements of the ESSI were subsequently grouped into 13 skill clusters and multivariate methods were used to evaluate differences in rated importance of skill clusters as a function of occupation and employee type.

In Study Two a subsample (*n* = 77) of the 241 employers who had responded to the ESSI completed a second questionnaire, the Employment Survival Skills Standards Survey. For the Standards Survey, the individual skill statements of the ESSI were reworded to describe skill deficits and employee failings. Respondents to the Standards Survey were required to rate each listed skill deficit with respect to three dimensions: (1) the number of skill deficit occurrences permissible prior to employee termination, (2) the perceived seriousness of each skill deficit occurrence, and (3) the frequency with which each skill deficit occurred in new employees. As in Study One, the skill deficit statements were grouped into 13 skill clusters and multivariate analysis procedures were used to evaluate rated differences between clusters as a function of occupation.

It was found that employers generally rated skills as less important for the job success of disabled as opposed to nondisabled workers, but that this tendency was not associated with any specific skill cluster or occupation. Although there were more similarities than differences in skill cluster ratings across occupations, differences in rated importance, number of skill deficit occurrences permissible, and perceived seriousness of skill deficits were noted for a few skill clusters as a function of occupation. No differences between skill clusters were found with respect to rated frequency of skill deficit occurrence.

In comparing the results of Study One to those of Study Two, it was found that the relationship of employers' opinions with respect to the importance of selected skills to employment success and their opinions with respect to employee deficits in the same skills was quite complex. No relationship was found between employers' ratings of the importance of skill clusters and their level of tolerance for deficit occurrences in the same skill clusters or rated seriousness of skill deficit occurrence, but importance ratings were negatively related to the frequency of skill deficit occurrence. However, employers' perceptions of the seriousness of skill deficit occurrences were negatively related to their tolerance for such occurrences and negatively related to the frequency of skill deficit occurrence.

The data were discussed in terms of their relevance for developing employment preparation curricula for entry-level workers with mental disabilities.

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I. INTRODUCTION

The last fifteen years have been an invigorating time for professionals concerned with the vocational habilitation of persons with mental disabilities[1]. We have seen two major developments challenge the many myths and prejudices that have for so long formed the basis of public conceptions about the abilities and potentials of persons with mental disabilities. First, the promotion of the broad concept of normalization by Wolfensberger (1972, 1980) and the growing public acceptance of the principles associated with this concept have led to increasing efforts to fully integrate persons with severe disabilities into the mainstream of society (e.g., Bruininks & Lakin, 1985; Flynn & Nitsch, 1981; Novack & Heal, 1980; Spiegel & Podair, 1981). These efforts have, in turn, brought about a deeper appreciation of the importance of gainful employment to the quality of life and successful community adjustment of persons with disabilities (e.g., Edgerton, 1979; Matson & Rusch, 1986; Schutz & Rusch, 1982).

Second, advances in the application of behaviour analysis technology to vocational instruction (e.g., Bellamy, Horner, & Inman, 1979; Bellamy, Peterson, & Close, 1975; Connis, Thompson, & Sowers, 1981; Ebert & Crocker, 1978; Gold, 1980; Karan, Wehman, Renzaglia, & Schutz, 1976; Mithaug, 1981; Rusch & Mithaug, 1980), together with a shift in training paradigms— from work activity and sheltered employment models to community-based transitional training and supported employment models (e.g., Ebert, Bevan, & Dennis, 1983; Krauss & MacEachron, 1982; Revell, Wehman, & Arnold, 1984; Vargo, Dennis, Blevins, & Ebert, 1987)— have led to a great deal of optimism regarding the outcome of vocational habilitation (Matson & Rusch, 1986). "We are [now] better at teaching people to do real things in the real world and at devising adaptations that allow at least partial participation" (L. Brown, quoted in Rusch, 1986, p. 341). As a consequence, some form of open employment is currently seen as a realistic goal for many persons with mental disabilities (Rusch & Mithaug, 1980; Rusch & Schutz, 1981; Schutz & Rusch, 1982).

---

[1] The phrase "persons with mental disabilities" will be used in this dissertation to refer to persons who demonstrate significant handicap in any or all of the following broad areas of human functioning: physical, educational, social, or vocational; and where such handicap is the result of generalized intellectual deficit due to organic brain disease or brain trauma, genetic disorder, socio-familial factors, or chronic psychiatric disorder. As used herein, the phrase "persons with mental disabilities" may be considered synonymous with the phrase "persons with mental handicaps" as currently used by many other researchers, and includes persons classified as "mentally retarded" as well as many of those persons designated as "developmentally handicapped".

These changes in perspective and capability have led to a renewed interest in the vocational habilitation of persons with moderate to severe mental disabilities and training for open employment has become the primary goal of an increasing number of habilitation efforts (Appleby, 1978; Mithaug & Stewart, 1978; Rusch, 1979). The focus of habilitation efforts is no longer the preparation of individuals for sheltered living and work environments but rather the preparation of persons with disabilities for success in the real world.

As the number of habilitation programs that focus their instruction on preparation for open employment continues to grow, the question of what skills and behaviours are essential to prevocational curricula takes on increasing importance (Alper, 1985). Given the often limited resources available to training programs and the great effort commonly required to inculcate mentally disabled persons with even basic skills, streamlining training efforts to focus on only those skills and behaviours most essential to employment success is critical (Mueller & Wilgosh, 1985). Research focussing on the identification of skills associated with job success is an important first step in the improvement of employment preparation curricula (Rusch, 1979).

A recent and fruitful approach to developing relevant curricula for persons who are disabled has been to base instructional objectives on the specific demands of natural environments as determined through an "environmental inventory" (Brown, Branston-McClean, Baumgart, Vincent, Falvey, & Schroeder, 1979). With respect to vocational training this approach has involved the use of subjective evaluation techniques (Kazdin & Matson, 1981; White, 1986) to identify the skills necessary for successful employment. An extension of the concepts and methods of social validation (see Kazdin, 1977), subjective evaluation[1] involves surveying or interviewing potential consumers or significant others to determine acceptable program goals, procedures, and outcomes (Rusch, Schutz, & Agran, 1982). In the development of employment preparation curricula, subjective evaluation requires that potential future employers be surveyed to determine appropriate instructional objectives. Although such an approach may be viewed by some as overly simplistic, one must be mindful of the fact that, in the past, curricular content in educational and vocational programs for adults with mental disabilities has come primarily from the developmental literature on nonhandicapped children, professional judgements of producers of commercial products, and professional inferences regarding the skills that may be necessary to function in the community (Brown, Falvey, Vincent, Kaye, Johnson, Ferrara-Parrish, & Grunewald, 1980; Lovett & Harris, 1987). It is only relatively recently that researchers have gone out into the community to directly ask those who live and work in various community settings what skills are most important in each setting.

---

[1] This procedure was originally described under the name of "subjective evaluation" by Kazdin (1977), but was brought into the vocational habilitation literature by Rusch (1979) as "descriptive validation assessment". The original nomenclature will be used in this dissertation.

In the majority of surveys to date, the respondents have been special educators, sheltered workshop staff or vocational rehabilitation practitioners, not actual employers (e.g., Foss & Bostwick, 1981; Foss & Peterson, 1981; Johnson & Mithaug, 1978; La Greca, Stone, & Bell, 1982; Mithaug & Hagmeier, 1978; Mueller & Wilgosh, 1985; Mueller, Wilgosh, & Dennis, 1987; Nelson, 1977b; Rusch & Mithaug, 1980). Although this approach may be appropriate for determining what skills are important for success in sheltered work settings, there is some controversy surrounding the issue of how well judgements of special educators and rehabilitation practitioners correspond to those of competitive employment supervisors (Rusch, Schutz, & Heal, 1983). Only a few studies have actually surveyed employers in nonsheltered settings and given some indication of what behaviours employers consider to be acceptable and necessary for entrance into a competitive work setting (e.g., Alper, 1985; Burton, Chavez, & Kokaska, 1987; Gruenhagen, 1982; Morrissey, Paul, Dion, & Dindblad, 1984; Rusch, Schutz, & Agran, 1982; Salzberg, Agran, & Lignugaris/Kraft, 1986). Unfortunately the interpretability of the results from the majority of these employer surveys is somewhat diminished by limitations in questionnaire design and comprehensiveness, sample size, or a failure to obtain data for a number of different occupations. As well, there are indications that results obtained in one geographic region may not be highly generalizable to other regions (Alper, 1985). This apparent lack of generalizability from community to community poses particular problems for Canadian special educators and habilitation practitioners since no data from Canadian employer surveys has yet to see publication.

The purpose of the research reported herein was to expand the current data base with respect to: (a) the identification of work-related social and vocational skills deemed necessary by employers for successful employment in low-skill occupations; (b) the identification of skill training objectives based on employers' criteria for employee termination and their perception of the severity of specific skill deficits and failures in job performance; and (c) the identification of industrial norms for the occurrence of specific skill deficits and job performance failures in new entry-level employees. Two studies utilizing subjective evaluation methodology with Canadian employers are reported. The first study focussed on the question of identifying employment survival skills[1]. The second was focussed on determining valid performance criteria for skills training as well as industrial norms for the occurrence of skill performance problems in new employees.

In Study One, a sample of Alberta employers were asked to rate a set of 100 different work-related behaviours representing 13 skill clusters for their importance to the job survival of either mentally disabled, or nondisabled workers in one of eight entry-level occupations. Importance ratings for the 13 skill clusters were analyzed by type of employee rated as well as by occupation.

In Study Two, a subsample of those Alberta employers who responded to the first survey were asked to rate 94 skill deficit statements (derived from the items of the earlier survey) for: (a) the number of violations (skill deficit occurrences) permissible before employment termination; (b) the frequency of their occurrence in inexperienced employees; and (c) their subjective level of seriousness. Survey items were again grouped into 13 skill clusters and violations, frequency and seriousness data were analyzed as a function of occupation. In this second survey no comparisons between disbled and nondisabled workers were made.

---

[1] The concept of "survival skills", as articulated by Rusch (1979), refers to social and vocational skills that, when acquired, increase the likelihood of successful competitive employment in any vocational setting. Survival skills include important work-related behaviours in addition to performing one's specific job task. In the context of employment, the survival skills concept entails corroboration by employers, supervisors and coworkers of the goals, procedures, and results which will help the worker gain acceptance in the work setting (Rusch & Schutz, 1981).

The research reported herein attempted to correct some of the problems inherent in previous studies by: (a) surveying a relatively large sample of Canadian employers representing all major sectors of the economy; (b) obtaining data for a broad selection of work-related social and vocational behaviours; (c) obtaining data on a set of work skills along more than one perceptual dimension; (d) obtaining data on survival skills for a number of different occupations; and (e) examining the possibility of employer biases in perception of skill importance with respect to the job survival of mentally disabled versus nondisabled workers.

II. REVIEW OF RELATED LITERATURE AND RESEARCH

A. IMPORTANCE OF EMPLOYMENT

The significance of employment in the lives of most adults in North America is hardly to be disputed. To be employed is a deeply embedded cultural value in North America (Schrank, 1978) that ranks with such other values as motherhood, freedom, and religious belief. Employment is a basic and central aspect of normal adult living and employment status permeates most aspects of adult life (Turkel, 1972).

Employment is frequently a prerequisite to gaining recognition as a fully competent adult in our work-oriented society (Foss & Peterson, 1981). Moreover, employment status is a powerful classifier of citizens as either productive contributors or encumbrances to society. Those who are employed gain in self-esteem, whereas those who are chronically unemployed are dependent on the welfare of others for their basic subsistence and often are not held in high esteem (Wolfensberger, 1972). The many activities associated with employment— preparing for work, commuting, producing, interacting with coworkers and supervisors, and earning an independent living— are all hallmarks of successful adult adjustment (Edgerton, 1979; Halpern, Close, & Nelson, 1986). Employment in the community also promotes personal growth, expands the individual's social circle, enhances social status, provides a means for participation in normal activities, and allows the individual to contribute to the community (Bellamy, Sowers, & Bourbeau, 1983). Although it certainly is true that work is the most common means to attain the self-respect that is derived from being economically self-sufficient, employment has come to mean much more than that to many people. Where once work was something a person did solely to survive, over the course of recent history work has become a more central aspect of our lives. Where once a person was defined by where he or she was born and by the social position of his or her family, it is the job that predominantly defines the individual today (Kerr, 1979). In our present society, the social and psychological rewards derived from most jobs have come to exceed the economic benefits received and a majority of employed persons would continue to work even if it were not financially necessary to do so (Krahn, 1981). In this respect, work is no longer a means to an end, but has come to be an end in itself (Braverman, 1974).

Of equal significance, a job may be seen as the "glue" that holds a person together (Halpern, Close, & Nelson, 1986). In this respect, the job may be regarded as an axis along which the worker's pattern of life is organized. It serves to maintain the individual within the group, to regulate life-activity, to fix his or her position in society, and to determine the pattern of social participation and life experience. As well, the job is a source of many of the worker's satisfactions and affective experiences (Friedmann & Hovighurst, 1961). For many adults a job is a major component of their personal identity and to be without a job may have serious negative consequences for the individual's mental and physical health (Bland, Newman, & Orn, 1988; Brenner, 1977).

The principle that work is one of the prime factors in the development of dignity and a positive self-image is no less true for persons with disabilities than for those who are not disabled (DiMichael, 1969). If anything, it is likely that work is even more important for persons who are disabled because it provides an avenue of access to roles and images that are valued in the community (DeFazio & Flexer, 1983). The importance of work to the community adjustment and self-esteem of persons with mental disablities has been recognized by both disabled persons (e.g., Lovett & Harris, 1987) and their parents (e.g., Wilgosh & Covassi, 1988). As well, the results of a recently reported study by Gersten, Crowell and Bellamy (1986) verifies that earning wages can have a significant positive effect on perceived self-competence and independence of persons with severe mental retardation.

B. EMPLOYMENT PARTICIPATION OF PERSONS WITH MENTAL DISABILITIES

Given the growing recognition of the importance of work, it is hardly surprising that the issue of employment is now considered a critical one by those concerned with the successful community adjustment of persons who are mentally disabled (Elder, 1984; Kernan & Koegel, 1984; Will, 1984a). This is particularly the case because persons with severe mental disabilities have very little opportunity to participate in the workforce and, therefore, they derive few of the important social and economic benefits that can accrue from employment.

In the United States, where there is much recent data available on the employment status of persons who are disabled, the picture is grim. In a review of U.S. census data, Bowe (1983) reported that 66% of all working-age men with disabilities and 81% of working-age women with disabilities were unemployed. A similar review of census data by the U.S. Commission on Civil Rights (1983) resulted in the conclusion that 50% to 75% of all Americans with disabilities were unemployed. The results of direct survey studies have tended to confirm these reviews of census data. For example, a 1982 follow-up study of public school special education program graduates conducted by Hasazi, Gordon, and Roe (1985) found that almost 50% of these individuals were unemployed, with much higher unemployment rates among those persons labelled as severely handicapped by their disability. A similar follow-up survey of recent Colorado special education graduates by Mithaug, Horiuchi, and Fanning (1985) reported an unemployment rate of 31%, increasing to 68% when part-time jobs were excluded.

An even more grim picture is developing from recent surveys focussing on persons with mental disabilities. In a Maryland survey of 1450 persons with developmental disabilities, Crites, Smull, and Sachs (1984) reported that only 5% had jobs in business and industry. Similarly, in a comprehensive follow-up study of young adults with mental retardation in Virginia, the unemployment rate was found to be approximately 60% and, if part-time and sheltered employment were omitted, to rise above 70% (Wehman, Kregel, & Seyfarth, 1985). These percentages translate into significant numbers of persons when cast in the light of recent estimates by the U.S. Administration on Developmental Disabilities suggesting that there are 3.9 million persons with developmental disabilities in the United States (cited in Kiernan & Ciborowski, 1986, p. 25).

The low employment participation of persons who are disabled is even more serious a problem when one takes into consideration the often noted high incidence of work interruptions among those who do obtain employment, their concentration in the secondary labour market with less job security and less full-time employment, and their disproportionately low wages compared with nondisabled workers (Levitan & Taggert, 1977; Mithaug, Horiuchi, & Fanning, 1985; Wolfe, 1980).

In Canada, where the data is sketchier than in the U.S., the employment picture for persons who are disabled appears similarly grim. Estimates suggest that fully one-half of all persons aged 15 to 64 years who are disabled are unemployed (NUGE/COPOH, 1983), and another third are underemployed

(Canadian Council on Social Development, 1980). Furthermore, those persons with disabilities who do have employment earn significantly less than do the employed nondisabled (Statistics Canada, 1986). Moreover, as in the U.S., things are even worse for those with mental disabilities, who have an estimated unemployment rate of greater than 75% (Statistics Canada, 1986).

Clearly, individuals with mental disabilities do not participate in the workforce to the same extent as nondisabled citizens. In Canada and the United States hundreds of thousands of potentially employable individuals— the majority of whom would be grateful for any opportunity to work— remain idle or are being served in day programs that typically lack vocational training and placement opportunities (Bellamy, Sheehan, Horner, & Boles, 1980; Kappel, Cawthorpe, & McWhorter, 1983). This represents a deplorable waste of human resources that is especially shameful in the light of numerous demonstrations that individuals with mild, moderate, and even severe disabilities can succeed in a variety of employment options with or without accompanying support services (Parent & Everson, 1986). Several articles from business and trade journals indicate that workers with disabilities can rate as well as their nondisabled coworkers in production speed, overall job performance, and employment costs (Ashcraft, 1979; Kelley & Simon, 1969; Kroger, 1979; Lasden, 1982).

C. EMPLOYABILITY OF PERSONS WITH MENTAL DISABILITIES

Whereas in the not very distant past it was widely believed that most persons with mental disabilities were incapable of substantial work and were unemployable, in more recent times this belief has been sharply challenged. Advances in vocational habilitation techniques have over the years expanded the concept of employability to include persons with even the most severe disabilities.

It is now increasingly being argued that most persons with severe disabilities are able to work in positions paying significant wages, provided that suitable job opportunities are offered and appropriate training and support services are provided (Elder, Conley, & Noble, 1986). Adult day programs or life-long sheltered employment are no longer considered the only viable options for persons with severe mental disabilities; rather, "real work for real pay" (McLeod, 1985) is now viewed as a feasible outcome for the majority of such persons (see Kiernan & Stark, 1986a; Rusch, 1986; Rusch & Mithaug, 1980; Wehman, 1981; Wehman & Hill, 1985). In the light of this increased confidence in the untapped vocational potential of persons with mental disabilities, the Association for Retarded Citizens recently estimated that, given appropriate training, fully 75% of children with mental retardation could be completely self-supporting as adults, and another 10-15% could be partially self-supporting (cited in McLeod, 1985, p.43).

This new found confidence in the vocational potential of persons with mental disabilities began to develop in the mid-1960s with the successful application of applied behaviour analysis technology to vocational habilitation (e.g., Crosson, 1969; Zimmerman, Overpeck, Eisenberg, & Garlick, 1969). Whereas earlier research had focussed without real success on relating general factors or variables (e.g., level of intelligence, age, school achievement, personality, motivation, etc.) to employability and success on the job (see Mithaug & Haring, 1977), the focus of this newer line of research was on work skill acquisition, social skills training, production enhancement, and the promotion of maintenance and generalization within sheltered work settings (see Bellamy, Inman, & Schwartz, 1978). Soon there was a proliferation of research reports demonstrating the utility of applied behaviour analysis in the systematic training of persons with severe disabilities to perform useful and complex vocational tasks in sheltered work settings (e.g., Bellamy, Peterson, & Close, 1975; Connis, 1979; Evans & Spradlin, 1966; Friedenberg & Martin, 1977; Gold, 1972, 1974, 1976; Huddle, 1967; Hunter & Bellamy, 1977; O'Neill & Bellamy, 1978; Renzaglia, Wehman, Schutz, & Karan, 1978). In short order a core group of instructional strategies emerged from these studies and, by the late 1970s, a number of "best practices" texts (e.g., Bellamy, 1976; Bellamy, Horner, & Inman, 1979; Bellamy, O'Connor, & Karan, 1979; Bernstein, Ziarnik, Rudred, & Czajkowki, 1981; Karan, Wehman, Renzaglia, & Schutz, 1976) had pulled the technology together, making it broadly available to habilitation practitioners. Collectively these production-oriented studies demonstrated that, despite significant barriers to learning, persons considered severely mentally disabled could be taught to perform almost any work that was available when provided with systematic and appropriate learning experiences (Rudred, Ziarnik, Bernstein, & Ferrara, 1984).

Nevertheless, the demonstration that severely disabled persons could do complex work fell considerably short of actual placement into competitive employment (Usdane, 1976). Even with improved training technology, traditional day activity, sheltered workshop, and day habilitation programs were failing to successfully exit clients into competitive employment in any great numbers (Appleby, 1978; Pomerantz & Marholin, 1981). Outcome research data was failing to support the assumption, implicit in the workshop training model, of skill transfer from sheltered work environments to integrated work environments. New approaches to vocational training for competitive employment that deal with the problem of generalization from one environment to another were and continue to be necessary (Rusch, 1979; Schutz, Vogelsberg, & Rusch, 1980).

D. CURRENT VOCATIONAL HABILITATION SERVICES FOR PERSONS WITH MENTAL DISABILITIES

In both Canada and the United States the vast majority of adults with mental disabilities currently.receive habilitation services in adult day programs, work activity programs, sheltered workshops, or comprehensive vocational habilitation programs within their own or a nearby community. The present service system in both countries is predominantly operated by the private nonprofit sector with monitoring and major funding provided by the public sector. In both countries the predominant service model is a developmental one in which program consumers are expected to move up through a continuum of services ultimately leading to placement into open employment.

Habilitation Services in the United States

The roots of the current system of vocational training and placement services for persons with mental disabilities in the United States can be traced back many decades to programs initiated by a variety of government and private residential institutions, charities, and parent organizations to provide sheltered settings in which some work activity would be possible. These programs were predicated on the assumption that the apparent difficulties of persons with mental disabilities in obtaining or maintaining employment stemmed from their inadequate abilities in most areas. Open employment was seen as an unobtainable goal because it was assumed that they were incapable of learning more complex production tasks or working at levels of productivity approaching those of nondisabled workers. The goal of these programs, therefore, was not to train people for real employment but rather to provide a protected and highly structured environment outside the mainstream of society wherein the program client could work and be cared for without the pressures of interaction and competition with nondisabled persons.

The sheltered workshop concept was introduced in the United States in 1838 by the Perkins Institute for the Blind (Bellamy, Sowers, & Bourbeau, 1983). After World War I and the passage of the Soldier's Rehabilitation Act of 1918, the primary focus of sheltered workshops was the rehabilitation of handicapped veterans. The vast majority of persons with profound, severe, and moderate mental disabilities were institutionalized in large state hospitals and work farms. But this soon changed; by the mid-1940s various amendments to the Vocational Rehabilitation Act permitted workshops to pay below-minimum wage (which together with tax-free status, allowed more equal competition with other businesses for contract work) as well as provide services to mentally disabled adults who showed some productive capacity. Prior to 1954 there were only six sheltered workshops in the United States serving predominantly a physically handicapped population (Nelson, 1971), but by the late 1970s this number had grown to over 5,500 sheltered workshops serving over 90,000 persons classified as having mental disabilities, representing over 60% of the total workshop population (Bellamy, Rhodes, Bourbeau, & Mank, 1986; Hill, Hill, Wehman, Revell, Dickerson, & Noble, 1985). The speed with which persons with mental disabilities entered the workshop system was phenomenal. Between 1963 and 1976, the number receiving services in certified sheltered workshops increased over 500% (Bellamy, Rhodes, Bourbeau, & Mank, 1986).

Although originally designed as places for protected long-term employment, as the U.S. vocational habilitation system became more dependent on sheltered workshops as a primary service provider for adults with certain disabilities, workshops were encouraged to develop techniques for vocational rehabilitation (Bellamy, Rhodes, & Albin, 1986). Further amendments to the Vocational Rehabilitation Act in 1954 authorized grants to nonprofit agencies in support of research and development of employment options for persons with mental disabilities (United States Department of Labor, 1977). This increasing federal support for employment placement-related activities turned attention away from long-term workshop employment and toward preparation of program clients for open employment.

One result of these government incentives was the development of dual objectives for workshops which were now expected to provide long-term sheltered employment as well as move individuals into competitive jobs (Neff, 1970). Long-term employment of severely disabled adults gradually became a secondary concern for workshop operators (DuBrow, 1959; Whitehead, 1979). Many sheltered workshop programs assumed the role of a therapeutic modality used to build tolerance to competitive employment, attempting to foster work readiness by stressing work evaluation, work adjustment, and counselling (Ruegg, 1981). As well, more and more workshops began to refuse entrance to persons who were not expected to be made more employable within a reasonable time (Flexer & Martin, 1978).

A second major influence on the system has been deinstitutionalization and the related government supports for the implementation of community day services. These factors have acted to greatly expand the group of consumers being served by private service providers. With the emptying of the large residential state hospitals, the private sector had to find ways to serve greater numbers of individuals who earlier would have been denied entrance into sheltered workshop programs because of their apparent inability to participate in either sheltered employment or open employment preparation (Bellamy, Sowers,

& Bourbeau, 1983). To accommodate these individuals with more severe disabilities, private service providers developed various day activity programs offering very elementary "prevocational" training activities expected to prepare program clients for eventual placement in a more advanced workshop program offering sheltered employment and/or transitional training for open employment (Katz, 1972).

Although there are many differences from state to state, the present system of private vocational service providers in the United States can be classified into three general types of programs: Regular Program Workshops (RPWs) and Work Activities Centers (WACs), two classes of sheltered workshops defined in the Fair Labor Standards Act and monitored by the Department of Labor, and Adult Day Programs (ADPs) which are managed by state Developmental Disabilities Councils (Bellamy, Sowers, & Bourbeau, 1983). RPWs are sheltered workshops designed to serve more capable or productive individuals in a controlled environment simulating real industry. The work provided is intended to be a therapeutic, tolerance-building activity designed to foster good work habits and the development of generic and specific work skills that will enhance vocational readiness of clients (Bitter, 1979; Ruegg, 1981). In most cases the work provided consists of simple, repetitious bench-assembly tasks obtained through subcontracts to various outside businesses and industries. RPW services are considered to be time-limited and clients are expected to move into open employment eventually. In 1976 approximately 37,000 persons were receiving services in RPWs (United States Department of Labor, 1977).

In contrast, WACs are designed:

> "...exclusively to provide therapeutic activities for handicapped workers whose physical or mental impairment is so severe as to make their productive capacity inconsequential. Therapeutic activities include custodial activities (such as basic skills of living) and any purposeful activity so long as work is not the main purpose." (Federal Register, 1974, p. 17509).

Placement in a WAC program is considered likely to be longer-term but it is still expected that clients will receive training that will enable them eventually to move on to a Regular Program Workshop. In 1976 there were over 85,000 individuals enrolled in work activities programs (U.S. Department of Labor, 1979).

Clients in both RPWs and WACs must be paid at least 50% of minimum wage. ADPs, on the other hand, are exempted from these Department of Labor regulations because they are totally nonvocational in orientation; focussing instead on basic education, and the development of motor skills, socialization, and communication abilities. Occasionally a work experience is provided in an ADP, but the major emphasis is on music, drama, arts and crafts (Katz, 1968). Monitored by Developmental Disabilities Councils in most states, ADPs are predicated on the premise that acquiring basic living skills and removing aberrant behaviours will facilitate movement of persons who are more severely disabled into a more vocationally oriented program (Bellamy, Sowers, Bourbeau, 1983). By 1979 there were over 1,900 such Adult Day Programs serving approximately 100,000 clients (Bellamy, Sheehan, Horner, & Boles, 1980).

Together, the three types of programs are meant to provide a continuum of service. Individuals who are severely disabled are expected to move in the continuum from ADPs to WACs to RPWs and on to open employment. The level at which individuals enter the continuum is generally determined by their assessed level of "vocational readiness".

More recently many RPWs have begun adding a fourth stage to the process. Termed "Transitional Employment Training" (Barrett & Lavin, 1987;

Rusch & Mithaug, 1980) or "Projects With Industry" (McCarthy, 1985; McMillion & Rice, 1983; Pati & Adkins, 1981) or "Community-Based Training" (Ebert, Bevan, & Dennis, 1983), these programs are short-term on-the-job training options tacked on to traditional in-house vocational training programs (e.g., Brickey & Campbell, 1981; Clark, Greenwood, Abramovitz, & Bellamy, 1980; Revell, Arnold, Taylor, & Zaitz-Blotner, 1982; Sowers, Thompson, & Connis, 1979; Wehman, Hill, & Koehler, 1979a, 1979b). Workshop clients who are nearly job-ready receive a period of supervised training in sheltered enclaves within real community industries or businesses prior to final placement into a competitive job elsewhere. In some cases, selected clients who are assessed as nearly job-ready upon referral to the RPW go directly into transitional on-site training without first spending time in the workshop itself. Such transitional training programs have successfully demonstrated increased job placements over more traditional institutional programs (e.g., Brickey, Campbell, & Browning, 1985; Ebert, Bevan & Dennis, 1983; Sowers, Connis, & Thompson, 1979; Wehman, 1981).

In response to growing recent criticism of the traditional workshop model of vocational training and increased awareness on the part of vocational habilitation specialists concerning the employment potential of persons with severe mental disabilities, U.S. federal legislation was enacted in 1984 requiring the state Developmental Disabilities Councils to adopt employment-related activities as a major planning priority (Kiernan & Ciborowski, 1986). Additionally, the Department of Education gave top priority to the development of employment opportunities by funding school-to-work transitional programs for students with disabilities exiting the public schools (see Will, 1984a), and established with the Administration on Developmental Disabilities ten statewide "supported employment" projects targeted at providing real work opportunities for persons with severe disabilities (Revell, Wehman, & Arnold, 1984; Will, 1984b).

Supported employment projects by-pass traditional workshops by placing workers with disabilities directly into paid jobs and directly providing any supervision, training, or transportation necessary to maintain the worker in employment (Krauss & MacEachron, 1982; Revell, Wehman, & Arnold, 1984; Wehman & Kregel, 1985). Such nonsheltered, competitive employment preparation programs have demonstrated that an on-site, community-oriented, behaviour-analytic approach to training can facilitate the acquisition of requisite social and vocational work behaviours (Rusch, 1983; Rusch & Schutz, 1981; Rusch, Schutz, & Heal, 1983; Schutz & Rusch, 1982). Moreover, outcome evaluation reports on these programs strongly support the contention that many persons with mental disabilities are capable of acquiring and maintaining the skills necessary for competitive employment and assuming productive roles in the labour force (e.g., Brickey, Campbell & Browning, 1985; Hill, Wehman, Kregel, Banks, & Metzler, 1987; Moss, Dineen, & Ford, 1986; Shestakofsky, Van Gelder, & Kiernan, 1986; Vargo, Dennis, Blevins, & Ebert, 1987; Vogelsberg, 1986; Wehman, 1986; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982; Wehman, Hill, Hill, Brooke, Pendleton, & Britt, 1985).

Habilitation Services in Canada

Like many other developments in Canada, the evolution of services for persons with mental disabilities has followed a pattern generally similar to that of the United States, but at a slower and less consistent pace. As in the United States, prior to and immediately following World War II, all services were provided through the medical system in special hospitals or large provincial residential institutions which were generally isolated from the larger community (Brown, 1984). Since that time, a community-based system of services has been evolving in Canada. Expanding rapidly in the 1960s and 1970s, this system has been characterized by relatively decentralized but segregated programs within the community (Mooney, 1971; Roeher, 1980). More recently, services for all disabled persons have begun to be part of the existing generic health and social service system wherein disabled consumers use the same resources as other citizens, with extra support as needed. Today in Canada all three stages of service development exist together in most communities and within all provincial disability policies (Lord, 1984).

The emergence of public policy within vocational habilitation in Canada has been especially slow compared to the United States, predominantly due to the ongoing jurisdictional struggle over health and social services that is so unique to the Canadian political arena. Consistently, little agreement can be reached between the federal funding sources and the provincial ministers (Marlett & Day, 1984). A second hindrance to coherent policy and programs has been the fact that federal responsibility for vocational habilitation services has over the years been transferred through a number of government departments— Veterans Affairs, Labour, Employment and Immigration, Health and Welfare, and most recently, Secretary of State. With each such transfer, vestiges of power and program have remained behind. Given the chronic federal/provincial squabbling over the years, and the federal government's inability to come to a decision as to which department should take responsibility for vocational habilitation services to various disadvantaged and disabled groups, major inconsistencies in policy and services are presently the norm from province to province. Some provinces have developed exemplary service provision while others have not.

Presently, the majority of Canadian adults with mental disabilities receive day habilitation services in community sheltered workshops, activity centres, or comprehensive vocational habilitation centres. Over 70% of these service centres exist in communities of less than 10,000 people and serve from 5 to 20 adults, approximately three-quarters of whom are classified as having mental disabilities (Zdriluk, 1983). Because of their small size, few Canadian habilitation programs provide specialized job placement services or carry out any research and development activities.

As in the U.S., activity centres provide services to persons with severe disabilities who are viewed as essentially nonproductive with no real potential for open employment. These programs usually purport to prepare severely disabled persons for entrance into sheltered employment. Sheltered workshops, on the other hand, are primarily geared toward providing long-term protected employment to individuals who are considered only marginally productive. Although the majority of small Canadian workshops provide long-term sheltered employment only, a secondary goal of increasing the work tolerance and vocational skills of workshop clients so that they may eventually move into open employment is also commonly stated.

Only a few comprehensive vocational services programs in major urban centres (e.g., Jewish Vocational Services in Toronto, Skills Unlimited in Winnipeg, the Vocational and Rehabilitation Research Institute in Calgary, and Western Industrial Research and Training Centres in Edmonton) have become major professional operations providing a full range of training and job placement services as well as carrying out research and development activities. Comprehensive vocational services programs are designed as transitional training programs with a primary goal of preparing persons for open employment.

Training activities in these centres occur under a variety of models (e.g., Ebert & Crocker, 1978; Marlett, 1979) and often include a period of in-house training in a structured, nonintegrated setting followed by community-based training in an integrated, open employment setting followed by job try-out and placement into competitive employment (Ebert, Bevan, & Dennis, 1983). Some vocational centres even include in-house work activity programs as an initial step for more severely disabled clients.

As in the United States, there is currently a movement in Canada to develop employment options for persons with mental retardation that do not include a period of sheltered workshop training. These programs are modelled after the American "Projects With Industry" programs (e.g., Dennis, Blevins, Ebert, Vargo, Mueller, & Smith, 1986; Vargo, Dennis, Blevins, & Ebert, 1987).

The majority of Canadian habilitation programs are private, nonprofit operations run by community boards, associations for the mentally retarded, parent groups, or such international agencies as Goodwill Industries and Jewish Vocational Services. Most Canadian activity centres, sheltered workshops, and vocational centres are funded through a combination of charitable donations, provincial/federal government block grants, and income from subcontracting. Unlike the United States where community workshops are almost solely dependent on funding from contract work, Canadian centres have a more stable financial base and are an accepted part of community social services (Marlett & Day, 1984).

Criticisms of the Sheltered Workshop Habilitation Model

Currently in both the United States and Canada the sheltered workshop model of habilitation services is predominant (Bellamy, Rhodes, Bourbeau, &

Mank, 1986; Flexer & Martin, 1978; Kappel, Cawthorpe, & McWhorter, 1983; Marlett & Day, 1984). The vast majority of adults with mental disabilities in both countries are enrolled in nonintegrated community-based habilitation facilities offering sheltered employment and/or vocational training, or in day programs offering activities that are not vocationally oriented. This system is envisioned as a flow-through continuum of program levels through which individuals are expected to progress toward open employment.

However, in the current zeitgeist of public insistence on greater independence, integration, and productivity opportunities for persons with disabilities, the role of community-based sheltered workshops and vocational training facilities has become the subject of some debate and controversy (Bellamy, Sowers, & Bourbeau, 1983; Bellamy, Sheehan, Horner, & Boles, 1980; Kirby, 1986; Rusch, Schutz, & Heal, 1983; Whitehead, 1979, 1986, 1987; Whitehead & Marrone, 1986; Whitehead & Rhodes, 1985). Increasingly, parents, advocate groups for disabled persons, special educators, and habilitators have been expressing concerns focussed on the dual, chronic problems of lack of open employment placement of persons served by workshops and low wages of workshop employees (Berkowitz, 1981; United States Department of Labor, 1977, 1979; Whitehead & Marrone, 1986). As well, the traditional role of sheltered workshops in providing employment preparation services to persons with mental disabilities is being challenged by newer "supported employment" service models (Bellamy, Rhodes, & Albin, 1986; Krauss & MacEachron, 1982; Rhodes, 1987). Many parents and others argue that students with severe disabilities should be adequately trained within the public school system to completely by-pass the workshop system and go directly into open employment, even if they require support in obtaining and maintaining their employment (Whitehead & Marrone, 1986).

One criticism that has been leveled at the traditional workshop model is that movement through the continuum to higher level services is almost nonexistent, affecting only a very few service consumers (Bellamy, Rhodes, & Albin, 1986; Bellamy, Rhodes, Bourbeau, & Mank, 1986). It has been suggested that sheltered work programs attempt to place only those clients evaluated as having potential for habilitation and that severely disabled individuals are rarely included in this category (Pomerantz & Marholin, 1981). For example, in the United States in 1976 only 3% of the persons served in WACs moved up to RPWs, and only 11% of all persons in RPWs and 7% of all persons in WACs were placed in open employment (United States Department of Labor, 1979). Furthermore, a number of studies by state monitoring agencies in the late 1970s have shown that on average fewer than 5% of participants in traditional service programs advance each year to higher level vocational services (Rhodes, 1987). Based on these data critics have suggested that workshop clients' chances of attaining open employment were approximately 1-in-10, or even lower for persons enrolled in ADPs or who are severely disabled (Bellamy, Sowers, & Bourbeau, 1983). In Canada, placement statistics would appear to be slightly higher than in the United States, approximately 12-15% per annum (Ebert, Bevan, & Dennis, 1983; Marlett & Day, 1984).

The "lack of movement" criticism is primarily based on the outcome results of large scale surveys of the American sheltered workshop system carried out in the mid-1970s and may no longer be well founded. For example, Kiernan & Ciborowski (1985) reported that sheltered workshops played a major role in the first year results of the President's Employment Initiative for Persons with

Developmental Disabilities. This nationwide American survey showed that over 22,000 persons with developmental disabilities were placed by sheltered workshops into competitive employment between October 1983 and September 1984, representing over 13% of the persons with developmental disabilities served during that fiscal year. Similarly, recent data from New Jersey showed that in 1983 state sheltered workshops placed over 700 developmentally disabled adults into open employment; a total that accounts for 51% of workshop case closures in that year. This apparent increase in open employment placements since the early 1970s appears to be a function of numerous workshops converting their service delivery systems, from support within the workshop only, to a transitional training model which includes support of the worker on the job in the community (Whitehead, 1986; Whitehead & Marrone, 1986).

In contrast, recent data from supported employment programs show placement rates into open employment of between 65-85% (e.g., Lagomarcino, 1986; Moss, Dineen, & Ford, 1986; Wehman, 1986). But such claims cannot be accepted without some qualification because job retention rates begin to drop precipitously after the first six to nine months of employment and, as well, the majority of these demonstration programs serve client populations comprised nearly equally of persons classified as mildly and moderately mentally disabled—generally, less than 5% are severely disabled (e.g., Lagomarcino, 1986; Vogelsberg, 1986; Wehman, Hill, Hill, Brooke, Pendleton, & Britt, 1985).

The second major criticism leveled at the sheltered workshop system involves the low wages earned by individuals in sheltered workshops. In the United States, with minor exceptions, all persons in RPWs must be paid at least one-half of the federal minimum wage. The only stipulation for persons in WACs or ADPs is that they must be paid according to their actual productivity. During

1976, earnings amounted to $1.21 per hour for RPW clients with mental retardation and only $0.39 per hour for WAC clients with mental retardation (United States Department of Labor, 1979). Approximately one-half of all workshop clients with mental retardation earned less than $10.00 per week in 1976 (Elder, Conley, & Noble, 1986). In Canada, the majority of workshop clients are considered to be in training and, therefore, are not paid for their work. While in training, most are supported financially through public assistance programs such as Alberta's Income Supplement for the Handicapped program.

The problem of low wages for workers in sheltered workshops is especially difficult to resolve. Historically in the United States, workshops have been permitted to pay less than minimum wage so that the low productivity of their severely disabled workers would not hinder the business competitiveness and financial viability of the workshops. Increasing the "profit" workshops could make on their products was viewed as a way of reducing the drain that workshops imposed on the public purse through annual operating subsidies. Two simple methods of resolving the low wage problem would seem obvious. On the one hand, the problem could be resolved by increasing the subsidies paid to workshops and therefore increasing the money available for worker salaries— but, this only shifts the burden on the public purse. On the other hand, workshops could be encouraged to modernize and increase the efficiency of their operations so as to increase profits available for salaries— but, increased revenues from contract sources are all too often seen as an opportunity for the state to reduce its operating subsidies and save money for the taxpayer. The best solution may to be to simply accept low wages while individuals are "training" within the workshop facility and put every effort into moving individuals out into paid employment as quickly as possible. Implicitly, if not explicitly, this is the approach currently in effect within Alberta. Unfortunately, this solution does not do very much for those profoundly and severely disabled workers who may never be able to function in open employment and, therefore, may end up in perpetual training. For this minority, some other workable longer-term solution, such as "structured" or "affirmative" industries (see Mank, Rhodes, & Bellamy, 1986), will need to be found.

Lastly, although in the light of the many successes reported by the proponents of supported work employment models (e.g., Bellamy, Rhodes, & Albin, 1986; Hill, Wehman, Kregel, Banks, & Metzler, 1987; Vargo, Dennis, Blevins & Ebert, 1987) it has been validly pointed out that traditional sheltered workshop programs, adult activity centres, and other large segregated vocational centres should not be the first choice of placement for persons with disabilities (Wehman & Moon, 1986), the growing acceptance of the newer supported employment approach is based on only a few well publicized successes of a relatively small number of demonstration programs (Dunn, 1987; Noble & Conley, 1987). Although supported employment services appear to be less costly and result in higher wages to workers (see Noble & Conley, 1987), such programs have yet to demonstrate superiority with respect to job placement and maintenance for all persons with disabilities (Whitehead, 1987). This is especially the case for persons categorized as severely mentally disabled who have not been included in any great numbers in these demonstration projects.

Caution in moving too quickly from community-based sheltered employment to transitional training facilities to on-the-job training is clearly indicated by results of a recent pilot study comparing 50 clients randomly selected from two sheltered workshop programs to 50 clients randomly selected from two supported employment program in Illinois. Lam (1986) concluded that the two types of programs were serving a very similar range of clients, yet the sheltered programs were more effective than the supported programs as measured by the number of hours worked, with no differences in total wages earned or workers' job satisfaction. Furthermore, the sheltered programs were more cost effective than the supported programs for more severely disabled clients whereas the supported programs were more cost effective for mildly and moderately disabled clients.

In this author's opinion, direct placement into open employment, even with massive and long-term supports at the job site, is not the most appropriate first option for all persons with mental disabilities— just as permanent sheltered employment should not be the only option. Rather, a comprehensive and integrated set of options such as proposed by Kiernan and Stark (1986a, 1986b) in their "Pathways to Employment Model" is required to meet the varied needs of disabled persons. Such an approach includes: (1) improved vocational curriculum and training for disabled students in the public schools (e.g., Ebert, Dennis, Mueller, & Vargo, 1985; Ebert, Dennis, Mueller, Vargo, & Bevan, 1985; Wilcox & Bellamy, 1982); (2) better communication between the educational and adult habilitation systems to improve transition from school to work (e.g., Cavanagh, 1983; Rise Incorporated, 1984); (3) time-limited transitional training within industrially-modelled habilitation facilities (e.g., Sowers, Thompson, & Conners, 1979) or within actual businesses along the lines of Projects With Industry programs (e.g., Dennis, Blevins, Ebert, Vargo, Mueller & Smith, 1986; Vargo, Dennis, Blevins, & Ebert, 1987); and (4) a multitude of employment options ranging from sheltered employment within a structured industry or an enclave within a community business (e.g., Boles, Bellamy, Horner, & Mank, 1984; Bourbeau, 1985; Cho, 1983; Horner & Bellamy, 1979; Rhodes & Valenta, 1985), to open employment with or without long-term supports (e.g., Krauss &

MacEachron, 1982; OSERS, 1984; Revell, Wehman, & Arnold, 1984). As well, nonvocational options must also be made available to those few individuals who are too profoundly disabled for work to be realistic or for those who simply do not wish to work (Kiernan & Stark, 1986b).

E. FACTORS AFFECTING THE EMPLOYMENT SUCCESS OF PERSONS WITH MENTAL DISABILITIES

Although the technology for increasing the employability of even severely disabled persons is now available and the feasibility of competitive employment as a goal for many persons with mental disability has been amply demonstrated, not all graduates from employment preparation programs are successful in maintaining open employment. While some of these failures can be blamed on numerous external factors that continue to negatively influence the employment success of mentally disabled persons— the general economic climate (Jackson, 1978, 1980) (although this has begun to improve recently— see Greenwald, 1984), the attitudes of employers toward mentally disabled workers (Wilgosh & Skaret, 1987), the attitudes of employment training and habilitation professionals (Bowe, 1978), the attitudes of the parents of mentally disabled persons (Wehman, Hill, & Koehler, 1979b), and the ineffectiveness of many agencies in job training, placement, and support (Appleby, 1978)— most cannot. The reality is that the employability of persons with mental disabilities continues to be most directly impacted by how vocationally competent they are (Salzberg, Likins, McConoughy, & Lignugaris/Kraft, 1986). All else considered, the more vocationally competent a person is, the more likely he or she will be successful if and wnen job opportunities arise.

Unfortunately, a significant number of mentally disabled workers continue to experience a variety of problems in the workplace that seriously hamper work adjustment and often lead to involuntary job termination or resignation (Foss & Bostwick, 1981; Foss & Peterson, 1981). For example, Olshansky and Beach (1974) reported that only 36% of 222 mentally retarded clients placed into competitive employment by a Boston sheltered workshop between 1968 and 1972 were still employed by the summer of 1973. Similarly, Brickey, Campbell and Browning (1985) reported that only 34% of 53 moderately and mildly mentally retarded clients placed into competitive employment in 1978 by a Columbus, Ohio sheltered workshop were still employed after four years. More recent data from supported employment programs are not markedly different. Average retention rates are a relatively high 65-85% at six to nine months post-placement, but these figures drop to 40-60% at one year post-placement, and even further to 30-50% after three years (see Hill, Wehman, Kregel, Banks, & Metzler, 1987; Lagomarcino, 1986; Moss, Dineen, & Ford, 1986; Vogelsberg, 1986; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982; Wehman, Hill, Hill, Brooke, Pendleton, & Britt, 1985). These employment retention statistics for persons with predominantly mild to moderate mental retardation are quite similar to the average 50-66% employment rate at follow-up from two to four years post-placement reported for all vocational rehabilitation clients in the United States (Bolton, 1981; Overs, 1971).

To some researchers such statistics are a clear sign that special educators and (re)habilitators are failing to adequately train those skills and behaviours essential for survival in the competitive workplace (e.g., Bolton, 1982; Hill, 1982; Mithaug, 1981; Rusch, 1983; Wehman, 1981). But such criticisms only beg the question of what factors are associated with employability and what skills are necessary for job maintenance in open employment. Three basic approaches have been applied to research on this issue: (1) post hoc comparison of successful and unsuccessful workers, (2) post hoc examination of the records of employees who have been separated from employment to determine common reasons for job termination, and (3) surveys of vocational experts and employers to determine what skills are considered most important to job success.

Comparison of Successful to Unsuccessful Workers

One traditional approach to determining what is important to success in open employment has been to follow vocational training program graduates after job placement and compare individuals who have remained in employment to those who have been separated from employment. The focus of this approach is on determining what variables discriminate between successful and unsuccessful employees. This has been an especially popular research method in the vocational rehabilitation literature. In the last 25 years, over 100 studies have examined the vocational adjustment of former vocational (re)habilitation clients (for reviews of this literature see Bailey, 1965; Bolton, 1982; Overs, 1971). These studies have generally focussed upon demographic and personal characteristics rather than environmental and social factors, and have used a variety of different criteria for successful post-training adjustment; with employment often only one of a number of adjustment indicators.

Other than such broadly defined variables as severity of disability, case difficulty, and overall psychosocial adjustment at placement, no client characteristics have proven consistently predictive of vocational success at follow up (Cobb, 1972; Bolton, 1982; Browning & Irvin, 1981; Overs, 1971). No consistent relationship has been found between employability and/or employment tenure and such factors as workers' sex, age, educational attainment, or intelligence (Mithaug & Haring, 1977). Two psychosocial factors consistently related to employment success have been family influence and personality (Mithaug & Haring, 1977). Personality correlates of employability have included emotional stability, gregariousness, ambition, self-respect, obedience, truthfulness, positive attitude toward work, and positive motivation (Rusch, Schutz, & Heal, 1983). Most studies have found a positive relationship between employment success and family positive attitudes toward employment and support for the worker (Rusch, Schutz, & Heal, 1983).

Generally, the research aimed at determining specific client variables that correlate with vocational adjustment and job maintenance "...is full of statistical significance, but devoid of practical significance" (Browning & Irvin, 1981, p. 392). The lack of consistency in this research has been attributed to various methodological flaws within individual studies (Bolton, 1981) and to differences in the populations sampled, the types of training offered prior to placement, geographical location, and the period of social history in which the investigation occurred (Cobb, 1972). However, a more likely reason for the failure of follow-up comparison studies to tell us much about the skills required for vocational success is that these studies have generally paid little attention to the workplace itself. They have all attempted to discover a set of unifying client variables that would predict adjustment across disparate job categories without assessing the influence of employment setting and employer variables such as: employer/supervisor attitudes toward and knowledge of disabled persons, the attitudes of coworkers, the size of the company or the type of industry, employers' perceived production needs, company profit status, actual job demands, and employer expectations for job performance, to name but a few. Furthermore, general characteristics are not sufficiently differentiated to provide for specific programs of corrective action (Mithaug & Haring, 1977).

A somewhat more successful approach to comparing unsuccessful to successful workers would likely be to ask employers to discretely point out their best and worst workers to researchers, who would then directly observe and compare the work-related behaviours of these two employee groups. Unfortunately, although a few observational studies have been done in which disabled workers were observed alone or observed in comparison to nondisabled workers (e.g., Cheney & Foss, 1984; Romer & Berkson, 1981), this author is not aware of any studies that have directly compared "good" and "poor" employees in the workplace.

Reported Reasons for Employment Termination

The reasons for the success or failure of employees with mental disabilities in open employment are of great interest to vocational habilitation professionals. A number of studies have interviewed employers or have examined the work histories of workers who were terminated from employment in an attempt to discover common reasons for job failure amongst workers with mental disabilities. Although the types of data obtained from such post hoc interviews and records examinations reasons vary considerably, from subjective impressions that might indicate inadequate social behaviour at work to analyses of quantified variables such as the number of workers fired for attendance problems or stealing, knowledge of why individuals are involuntarily terminated from employment by their employers is important, and can be used in modifying vocational training programs so as to enhance the chances of employment success for future workers (Hill, Wehman, Hill, & Goodall, 1986).

One commonly cited group of reasons for job failure relate to a "lack of job responsibility", which may be used as a summary term for behaviours from which one might infer that a worker is not committed to the job (Salzberg, Likin, McConaughy, & Lignugaris/Kraft, 1986). A number of studies that have examined the reasons for the job terminations of mentally disabled workers have reported one or more behaviours related to job responsibility (Brickey, Browning, & Campbell, 1982; Ford, Dineen, & Hall, 1984; Greenspan & Shoultz, 1981; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982). The most common were attendance and punctuality problems. Second to poor attendance and punctuality, stealing was a frequently noted problem. In addition, some employees were fired for failing to attend to required tasks.

Other factors external to the employee also play a role. For example, Kochany & Keller (1981) conducted a case by case analysis of persons with mental retardation who had failed in competitive employment after placement from a sheltered workshop. Although they found internal employee-related problems such as inappropriate social behaviour and poor attendance to be leading causes of job separation, external factors such as parental influence and economic lay-off were also found to be significant. In a similar vein, Wehman and his colleagues have also found the attitude of parents and concerned relatives to be a major stumbling block to the employment success of many disabled persons (Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982).

A major controversy with respect to reasons for job loss relates to the question of whether more jobs are lost because of deficits in task-production skills or social skills (Walker & Calkins, 1986). Task-production skills refer to nonsocial interactions that directly impinge on the production of work tasks to company standards for accuracy and expected rates (Salzberg, Likin, McConaughy, &

Lignugaris/Kraft, 1986; White & Rusch, 1983) and includes such behaviours as: attending to task, completing work assignments correctly and on time, working rapidly and efficiently, and moving safely about the work environment. Work-related social skills refer to the adequacy of the worker's interaction with coworkers, supervisors or customers and are directly related to the worker's ability to get along with others in the workplace (Schutz & Rusch, 1982; White & Rusch, 1983).

On the one hand, after reviewing the relevant literature, a number of researchers have concluded that the most commonly cited reasons for job loss are slow or incompetent task performance (e.g., Brickey, Browning, & Campbell, 1982; Chaffin, 1969; Schalock & Harper, 1978; Connis, Thompson, & Sowers, 1981). On the other hand, although admitting the importance of task-production skills, other researchers argue that more jobs are lost for social reasons than because of insufficient production-related job skills (e.g., Chadsey-Rusch, 1986; Greenspan, Shoultz, & Weir, 1981; Walker & Calkins, 1986). For example, other commonly cited reasons for job failure relate to such "social skill" deficits as blaming others for one's own mistakes, failing to respond appropriately to criticism, failing to request information or assistance when necessary, noncompliance, insubordination, and refusal to accept instructions from a new supervisor (Brickey, Campbell, & Browning, 1985; Greenspan & Shoultz, 1981), as well as difficulties in getting along with supervisors and coworkers (Foss & Peterson, 1981; LaGreca, Stone, & Bell, 1982).

Greenspan and Shoultz (1981) interviewed the previous employers of 30 mentally disabled workers (mean IQ = 61.8) who had been placed in jobs by the Eastern Nebraska Community Office on Retardation and had been involuntarily terminated from employment. The reasons given by employers for job termination were classified into three social and three nonsocial categories. Social categories included temperament (affective quality of the worker's behaviour in the workplace, e.g., serious emotional disturbances), character (moral quality of the worker's behaviour in the workplace, e.g., antisocial or irresponsible behaviour), and social awareness factors (the worker's understanding of other people and the work setting); whereas nonsocial categories included production (quality and quantity), health (physical fitness and stamina), and economic factors (layoff due to economic reasons). It was found that 57% of the 30 workers had lost their jobs for primarily social reasons versus 43% who had been terminated for nonsocial reasons. The difference was not statistically significant. The most common social reasons for losing a job fell within the social awareness subcategory, whereas the most common nonsocial reasons were related to economic problems (i.e., economic layoff). More specifically, 9 persons were fired for reasons of poor social awareness, 8 lost their jobs due to economic lay-off, 5 for problems of temperament, 4 for production deficiencies, 3 for reasons of character, and 1 because of chronic health problems.

Ford, Dineen, and Hall (1984) reported that six years of records kept by the University of Washington's Employment Training Program (see Moss, Dineen, & Ford, 1986) showed production related skill deficits to be involved in 47% of job losses and social skill deficits to be involved in 42% of job losses. With respect to the production skills category, insufficient speed, poor task completion, overly high supervision requirements, and noncompliance with specific instructions were commonly cited by employers as reasons for terminating employment. Similarly, with regard to social skills, poor social interactions with employers and coworkers, emotional outbursts, and inappropriate language were most often cited.

Hill, Wehman, Hill, & Goodall (1986) in examining Project Employability records for 107 job terminations that occurred over a six-year period concluded that one-half of the separations were due to employee-related reasons and the other half were caused by environmental forces outside the control of the employee. In descending order of their importance, the most common employee-related reasons for dismissal involved attitudinal problems (e.g., poor motivation, poor attendance, theft, noncompliance), specific skill deficits (e.g., slow work, low quality work, requiring too much supervision), and work disruptive behaviours (e.g., insubordination, aggression towards coworkers, bizarre or aberrant behaviour). Also in descending order of importance, external causes of job termination were most commonly related to social-contextual reactions (e.g., discomfort of coworkers or employer), economic lay-offs, parental interference, and other problems related to medical, financial or transportation problems.

In a partial replication of the Greenspan and Shoultz (1981) study, Hanley-Maxwell, Rusch, Chadsey-Rusch, and Renzaglia (1986) examined the records of a mixed sample of severely disabled workers (37 mild to moderate MR, 9 mentally ill, 5 other disabilities) who had been terminated from their first job placement. Reasons given by employers for separating employees were classified into social and nonsocial categories utilizing the classification framework proposed by Greenspan and Shoultz (1981). Of the 51 terminated workers, 37% lost their jobs for social reasons only, 25% for nonsocial reasons only, and 37% were terminated for a combination of social and nonsocial reasons. As in the original Greenspan and Shoultz (1981) study, the difference between the number of persons terminated for social reasons and the number terminated for nonsocial reasons was not statistically significant. However, unlike Greenspan and Shoultz's findings, the most commonly cited social reasons for job loss fell within the character subcategory, whereas the most commonly cited nonsocial reasons fell within the production subcategory. It was suggested that the differences in results were due to the fact that slightly over one-quarter of the workers in the Hanley-Maxwell et al. study had disabilities other than mental retardation (Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986).

Overall, the results of the various studies that have examined the reasons for job terminations among workers with mental disabilities consistently point out the importance of both task-production and social skills. In the light of such results, it would appear reasonable to this author to hypothesize that production and social skills interact. For example, a worker who is a poor producer but is very socially adept is likely to survive on the job far longer than a worker who is poor in both areas. Similarly, an employer is likely to have more tolerance for socially inept behaviour in the workplace if the worker in question is extremely proficient in production skills. In this regard, White and Rusch (1983) have provided evidence that supervisors' evaluations of nonsocial, work-related competence are influenced significantly by their evaluations of the workers' social skills, such as the ability to cooperate with coworkers. While demonstration of certain basic task-production skills may be sufficient for a mentally disabled person to obtain a job, performance of work-related social skills may assure that the disabled employee is viewed more favourably by coworkers and supervisors and, therefore, will remain employed (Salzberg, Likin, McConaughy, & Lignugaris/Kraft, 1986).

Another point that has apparently been overlooked in this line of research relates to the question of whether workers with mental disabilities lose their jobs for reasons that are different from those for nondisabled workers in similar types of jobs. The results of one study that specifically examined job loss among nondisabled workers in entry-level occupations suggests that there may be little difference between the reasons nondisabled and disabled workers lose their jobs. Wanous, Stumpf, and Bedrosian (1979) collected information on 1736 nondisabled employees who were newly employed in low-wage, blue-collar jobs. Of these, 33% worked for one week or less and only 27% were still employed after seven months. Of the 1239 workers who were no longer employed after seven months, 42% quit of their own accord, 28% were laid off for economic reasons, and 30% were fired for problems related to job responsibility, social behaviour or productivity.

Only one study has directly compared termination reasons of disabled and nondisabled workers in the same jobs and the results of this study suggest that the two groups of workers may lose jobs for different reasons. Using Greenspan's categorization system (Greenspan & Shoultz, 1981) to classify job termination reasons, Martin, Rusch, Lagomarcino, and Chadsey-Rusch (1986) examined the termination records of 141 competitively employed food service workers (133 nondisabled + 8 mentally disabled). It was found that seven of the eight mentally disabled workers lost their jobs for nonsocial reasons related to poor production competence. By way of contrast, more of the nondisabled workers (54%) lost their jobs for social as opposed to production reasons. For this latter group of employees, the most common reasons for job loss were related to the Greenspan's character and production categories, each accounting for 35% of the reported terminations. These results are also consistent with an observation reported in another recent study by Hill, Wehman, Hill, and Goodall (1986) in which it was noted that mentally disabled workers with lower IQ scores were more likely to lose their jobs for reasons of slow production or economic lay-off as compared to workers with milder intellectual impairment, who lost their jobs primarily for attitudinal and social reasons.

Another possible reason for differences in termination reasons for nondisabled versus disabled workers may relate to the "competence-deviance hypothesis" first formulated by Marc Gold (Gold, 1980, pp. 172-173). This hypothesis suggests that the more competence an individual has, the more deviance will be tolerated in that individual by others. Applied to competitive employment and the work setting, Gold's hypothesis suggests that more severely disabled workers, who often lack vocational competence, will be more likely to lose their jobs for relatively minor behavioural infractions, social errors, or deviance from the workplace norms. On the other hand, numerous social errors and eccentric or mildly deviant behaviour may be well tolerated in those workers who are viewed as more vocationally competent.

Determining Skills Important to Employment Success Through Subjective Evaluation

A third method of determining the necessary goals and focus of employment preparation programs involves using the process of social validation (Kazdin, 1977; Wolf, 1978) to identify the skills that are not only most important to the individual for survival in open employment but also are most valued by society (Paine & Bellamy, 1980). Included within the concept of social validation is the method of subjective evaluation in which potential consumers or their significant others describe and rate appropriate training goals (Kazdin & Matson, 1981; White, 1986). With respect to the social validation of employment preparation curricula, subjective evaluation involves having experts in vocational training or the workplace (e.g., employers, supervisors, coworkers) describe and rate work-related behaviours for their importance to success in the workplace by means of an interview or survey. These opinions are then used to develop valid prescriptions for subsequent training (White, 1986). Such questionnaire/interview studies can provide a useful expansion of information from termination studies and should be less subject to errors that may result from faulty memory or inaccurate employer records (Salzberg, Likin, McConaughy, & Lignugaris/Kraft, 1986).

Based on their experience with employers and business leaders, a number of vocational educators and researchers have suggested some of the general employee characteristics that may be important for job success in competitive employment. For example, from interviews with numerous personnel managers in large corporations, Boynton (1955) concluded that the majority of workers who failed to get promoted or who were discharged from employment lacked social competencies or demonstrated such negative characteristics as uncooperative behaviour, dishonesty, and lack of courtesy. Similarly, Wilson (1973) suggested that most people fail in employment or lose their jobs because of poor personal qualities or general attitudes toward work rather than because of insufficient specific job skills or inadequate job performance. Such generalized pronouncements of what employers are looking for in their employees are perhaps best summed up by Feirer (1976) who stated that, " ...when one asks the average business executive, 'What do you want from our vocational education programs?', the usual answer will be, 'Just give me some people who are honest, reliable, punctual, dedicated, pleasant, responsive, and free from all vices.' " (p. 4). Unfortunately, such generalized descriptions of "good employee" characteristics give us little useful information about specific employment survival skills that may be applied to the vocational training of persons with disabilities.

An early attempt utilizing descriptive social validation methods to determine what specific skills are most important to employment survival was reported by Nelson (1977b). Using a questionnaire designed to permit each of 21 basic skills to be individually ranked against every other, Nelson surveyed 450 secondary school teachers, counsellors, and administrators in a number of urban and rural Illinois public schools to determine which skills were considered most crucial to success in employment. The 21 skills surveyed by the *Occupational Survival Skills Questionnaire* were distilled from an initial list of over 500 skills through a process of extensive review by various committees and advisory groups (Nelson, 1977a). Although he obtained excellent overall agreement on which skills were most important for occupational survival and, therefore, should be included in vocational education curricula, Nelson's educators clearly placed a higher priority on educational as opposed to work values. Not surprisingly, these educators ranked as most important those skills that reflected basic goals of the educational system, such as having basic speaking and arithmetic skills, using initiative and demonstrating imagination, getting along with a variety of people, being dependable and punctual, and having basic writing skills. In contrast, they gave lower ratings to many items that appear to reflect the goals of the workplace, such as following safety regulations and instructions, being loyal to the employer, being able to work without close and constant supervision, managing time and materials efficiently, making decisions independently, and being neat and clean in appearance.

As an attempt at the social validation of a set of employment survival skills, Nelson's (1977b) study is seriously compromised by the fact that he surveyed the wrong population. Although it may make good sense to survey educators to determine what skills and behaviours lead to success in school, a discrepancy may exist between the special education teacher's perception of career preparation and those skills that employers seek in the youth they hire (Burton, Chavez, & Kokaska, 1987). Certainly the education system's current lack of success in adequately preparing youth for today's labour market (see Sen, 1982) suggests a very real lack of knowledge about the workplace and employers' concerns.

The available data on the issue of how well educators and employers agree on what is important for success in employment is mixed. For example, in a comprehensive survey of the vocational skills literature from both educational and industrial sources, Kazanas (1978) noted that only 49% of the unique competencies mentioned were identified by both educators and industrialists. Similarly, Burton and Bero (1984) in an employment skills survey of 25 employers and 50 teachers found that many skills mentioned by teachers as important to employment success were not mentioned by employers. On the other hand, in a similar employment skills survey of Missouri employers and vocational educators, Alper (1985) noted a high degree of agreement ($r = 0.85$) between the two groups on what skills were important for employment. Be that as it may, it makes much better sense to this author to ask those who employ or supervise persons in the workplace what behaviours and skills are important for vocational success.

One study which appeared to survey the right sampling group— namely, employers— unfortunately failed to ask the right questions. Recently, Junge, Daniels, and Karmos (1984) compared the perceptions of 51 employers regarding the importance of certain basic skills for success in employment with their perceptions of the competence of entry-level employees on those same skills. But the questionnaire they developed for their study included only 30 skills to be rated; all were academic skills fitting into the six basic categories of: mathematics, writing, reading, speaking and listening, reasoning, and scientific knowledge. Junge et al. asked their sample of employers to rate each of the 30 basic skills twice, once for the skills' relative importance to job success and a second time for their perception of their current employees' average level of competence in each skill area. Of most interest to the present discussion was the result of the employers' rankings of skills with respect to importance for job success. The employers ranked the six categories of basic skills in descending order of importance as follows: speaking and listening, writing, reasoning, reading, mathematics, and scientific knowledge. An open-ended question at the end of the survey asking for other skills important to job success elicited the following behaviours with high frequency of recurrence: good attitude toward work, willingness to adapt and learn, getting along with others, neat and appropriate appearance, and promptness and infrequent absence from work. Unfortunately, the results of this study are limited in their utility by the survey's narrow focus on academic-related skills and by the fact that employers were asked to rate entry-level employees with high school diplomas only.

Another attempt to delineate the skills most essential to employment survival was reported in a series of papers authored by a research team at the University of Missouri-Columbia. Kazanas and his colleagues took the position that specific job skills or knowledge were less important to long-term job survival than the psychosocial competencies reflected in work values, work habits, and work attitudes which, taken together, Kazanas termed "affective work competencies" (Kazanas, 1978; Kazanas & Beach, 1978; Kazanas & Wolff, 1972). Following a thorough search of the relevant research literature, Kazanas (1978) was able to synthesize a number of unique affective work competencies important to educators and industrialists. These 95 affective work competencies were later grouped by members of the research team into 15 "competency clusters" according to their common characteristics and developed into a scale, the *Affective Work Competencies Inventory* (AWCI), designed to quantify the affective characteristics that successful workers possess (Kazanas & Beach, 1978).

The first research study utilizing the AWCI was reported by Petty, Kazanas, and Eastman (1981). In this study, 25 employers representing six different types of occupational areas agreed to administer the AWCI to their 1265 workers and work supervisors. As well, 140 inventories were completed by vocational education teachers in 51 Illinois school districts. The rated levels of the affective work competencies as expressed by the respondents were compared using a two-way MANOVA with role classification (i.e., three respondent groups) and occupational areas as independent variables and scores on the 15 competency clusters as dependent variables. Significant main effects were reported for role classification and for occupational area, with no interaction. Of particular interest here, was the finding that supervisors rated themselves significantly higher than workers on five of the competency clusters— (1) ambitious, (2) cooperative, (4) considerate, (14) efficient, and (15) dedicated. This positive association between high ratings on these five competency clusters and the holding of a supervisory position in the workplace suggests that these competency clusters reflect the affective competencies that employers perceive to be important and which, when present, lead to promotion. Petty et al. also found that scores on nine of the competency clusters differed significantly over occupational areas, suggesting that the affective competencies shown by individuals may differ somewhat from occupation to occupation.

In a later investigation devised primarily to develop competency cluster score norms for different occupations, Beach, Kazanas, and Smith (1982) administered "over 9000" AWCIs to a randomly selected sample of students, teachers, work supervisors, and workers representing 22 occupations. Among other things, it was found that four competency clusters were consistently rated highest for all 22 occupations, namely: (1) ambitious, (15) dedicated, (7) follows directions, and (12) neat. Based on this study, these four competency clusters may reflect the most important affective competencies for employment in general. It must also be noted that the clusters (1) ambitious and (15) dedicated were found to separate workers from supervisors in the Petty et al. (1981) study.

Another study using the AWCI, sought to compare the perceived affective work competencies of vocational education students with those expected by their prospective employers (Miller & Usoro, 1981). In this investigation, the AWCI was administered to 911 vocational college students in Missouri and 185 Missouri employers who hire vocational college graduates. The students were asked to rate "their own expected work behaviour on the job", whereas the employers were asked to rate their "work expectations for beginning employees". It was found that employers had significantly higher scores than did the students on 14 of the 15 AWCI competency clusters, suggesting that employers expected a greater degree of affective competence of their beginning employees than the students expected to provide on the job. Of particular interest was the finding that employers could be maximally discriminated from students on the basis of eight competency clusters, namely: (7) follows directions, (4) independent, (13) dependable, (14) efficient, (8) careful, (12) neat, (5) accurate, and (10) emotionally stable. These eight clusters would appear to reflect the affective work competencies seen as most important to employment success by employers.

Moreover, two of these clusters— (7) follows directions, and (12) neat— were also rated highly across all occupations in the Beach et al. (1982) study. Similarly, one cluster— (14) efficient— also seemed to differentiate supervisors and workers in the Petty, et al. (1981) study.

The work of Kazanas and his colleagues suggests that there may be a core group of basic competencies that are important to success over most occupations as well as some competencies that vary in their importance to success as a function of differing occupations. As well, displaying certain affective competencies may have a positive relationship with being promoted to supervisory positions. Although these studies give some insight into the behaviours that may be important for survival in employment, Kazanas and his colleagues have not yet reported having employers directly rank their list of affective work competencies in order of importance to employment success nor have they yet reported direct comparisons between "good" and "poor" employees using the AWCI. Such further research would go a long way toward validating the affective work competencies included in the AWCI.

Another issue that has not been dealt with in the foregoing research is the question of whether the work skills important for job success differ for disabled as opposed to nondisabled workers. On the basis of common sense, it would appear reasonable to expect the skills necessary for success in a given job to remain invariant as a function of the personal characteristics of the worker doing the job. But what of an employer's perception of necessary job skills? Dependent upon a given employer's preconceived notions about prospective employees and their respective abilities, it may be that some employers will view different behaviours as important for different individuals even for the same job. This possibility is clearly suggested by the numerous studies showing that many employers believe disabled persons are absent from work more often, are less prompt, work less rapidly, are less productive, and have a poorer safety record on the job than nondisabled persons (see Dennis, Mueller, & Ebert, November 1986; Florian, 1978; Fuqua, Rathbun, & Gade, 1984; Smith, 1981; Wilgosh & Skaret, 1987; Williams, 1972). Such negatively biased expectations may lead employers to set different job performance criteria for disabled workers as opposed to nondisabled workers. The potential for bias in employer perceptions of what skills are crucial for job success can only be evaluated by comparing employer-generated lists of important work skills for nondisabled employees to those for disabled employees.

In a series of papers, Mithaug and his colleagues reported on the application of social validation methodology to the process of developing a prevocational training program for mentally disabled youth (see Mithaug, 1981). First, Mithaug and his associates developed and piloted a structured interview protocol for use with sheltered workshop supervisors (Mithaug, Hagmeier, & Haring, 1977; Mithaug & Haring, 1977). This questionnaire was then used in a later study (i.e., Mithaug & Hagmeier, 1978) to determine what behaviours were most valued within activity centres, developmental centres, and sheltered workshops.

In the Mithaug and Hagmeier (1978) study, workshop supervisors in five northwestern American states were asked to choose from 87 behaviour categories those considered to be most important for entry into sheltered employment. Over 90% of the surveyed workshop supervisors agreed that such skills and abilities as being able to communicate basic needs, move safely about the workshop, endure on-task for long periods of time without distraction, maintain proper grooming, and respond appropriately to instructions were important requisites for workshop entry and success. In contrast, far fewer supervisors agreed that such basic academic skills as reading, writing, and computation were important. Similarity, productivity was also ranked relatively low in importance. These findings were later shown to be reliable in a cross-validation using sheltered workshop supervisors in Kansas (Johnson & Mithaug, 1978). The results of these surveys of sheltered workshops were eventually incorporated into a more formal behaviour rating instrument, the *Prevocational Assessment and Curriculum Guide* (PACG) (Mithaug, Mar, & Stewart, 1978; Mithaug, Mar, Stewart, & McCalmon, 1980), for use in sheltered work settings.

More recently, Foss and Peterson (1981) surveyed job placement personnel in 64 sheltered workshops in 11 western American states to identify social-interpersonal behaviours most relevant to job tenure for mentally disabled adults. The questionnaire used in this survey included statements describing 21 social-interpersonal behaviours derived from the relevant research literature (e.g., following supervisor instructions, controlling aggressive behaviour, offering assistance to coworkers as needed, working cooperatively on group tasks, etc.). Respondents were asked to identify the five social-interpersonal behaviours that were "most relevant" to job tenure in competitive employment for "mentally retarded people" and the five behaviours that were "least relevant" to job tenure. Foss and Peterson found substantial agreement amongst their respondents (r = 0.97). Eight behaviours were identified as "most relevant" to job tenure by at least 30% of the respondents, namely: following supervisor instructions, responding appropriately to supervisor criticism or correction, refraining from exhibiting bizarre or irritating behaviour, working independently of direct supervision, maintaining an appropriate personal appearance, interacting appropriately with coworkers while on the job, controlling aggressive behaviour, and requesting assistance as needed. Seven behaviours were identified as "least relevant" to job tenure by at least 30% of the respondents, namely: maintaining a sense of humour, offering assistance to coworkers as needed, performing without undue anxiety in the presence of the supervisor, interacting appropriately with coworkers during lunch and breaks, utilizing interpersonal communication skills, refraining from stealing other's money or property, and behaving sexually in ways consistent with social norms.

By helping to delineate the specific skills and behaviours required for entry into sheltered employment, the foregoing research has important ramifications for the development of curricula for use in prevocational education programs. But there are dramatic differences between sheltered and open employment in both requirements and opportunities that suggest great caution be exercised in making any further generalizations (Sowers, Thompson, & Connis, 1979). Work activity programs and sheltered employment settings likely have different entrance criteria than those required for open employment. Similarly, most sheltered programs are not integrated, accept extremely low productivity, and likely have staff with a high tolerance for bizarre, maladaptive, or disruptive behaviour. In contrast, the requirements of a nonsheltered job include increased demands for quantity and quality of work, appropriate social and interpersonal behaviours, and adequate completion of necessary self-help skills. As well, the opportunities inherent within open employment include the chance to function in a normal environment, interact with nondisabled individuals on a daily basis, and exhibit "normal" living and working skills (Sowers, Thompson, & Connis, 1979). Such differences between sheltered and open employment suggest that surveying sheltered workshop supervisors will just as surely fail in telling us what is required for competitive employment as surveying educators (e.g., Nelson, 1977b) has failed to tell us about sheltered employment requirements.

Rusch, Schutz, and Agran (1982) used subjective evaluation to identify the expectations of employers regarding skills new employees should be able to perform. They surveyed 120 employers in food service and janitorial/maid service occupations in six Illinois communities using a questionnaire derived from Mithaug and Hagmeier's (1978) survey of sheltered workshops. To solicit information about their expectations for entry into employment, employers were asked to check off all skills that they believed to be important for successful job entry. These data permitted Rusch et al. to rank order skills on the basis of the proportion of employers agreeing that a given item was important to job success. Seventy social/vocational skills were considered necessary for successful entry into competitive employment by at least 80% of the survey respondents and five skills received unanimous agreement. Of these 70 behaviours, 16 social behaviours were agreed upon by 90% of the employers as being important. Essentially, the results from this study suggest that employers want their workers: (1) to be able to communicate at least their basic needs, (2) to be compliant, (3) not to disrupt the work setting, and (4) to follow directions.

In comparing their data from employers to that obtained by Mithaug and Hagmeier from sheltered workshop supervisors, Rusch et al. noted that the skills required for competitive employment were different from those considered necessary in sheltered workshops. The demands placed upon trainees in sheltered workshops appeared less stringent than those in open employment. Employer's standards also seemed higher.

More recently, Alper (1985) repeated Rusch's survey with Missouri food service and janitorial employers as well as secondary school teachers of the severely disabled. Although she found excellent agreement between her employer and educator groups ($r = 0.85$), Alper noted little agreement between her Missouri employers and Rusch's Illinois employers ($r = 0.20$). Ranking items on the basis of the proportion of employers in agreement that a given item was important, Alper noted a markedly different ordering than that reported by Rusch et al. Furthermore, compared to Rusch's employers, Alper's employer group reached 80% agreement on only 58 behaviours.

There are several possible explanations to account for the differences between the Rusch et al. and Alper studies. These include a few minor modifications to Rusch's questionnaire in Alper's study, employer differences in duration and type of experiences with workers of varying degrees and types of handicaps (Mueller & Wilgosh, 1985), and the possibility of differences in skill identification and acceptable performance criteria between the two geographic regions (Alper 1985). With respect to the latter explanation, Rusch (1983) has proposed that, "ideally, each community of employers should be surveyed to determine the skills required for employment entry" (p. 506).

Unfortunately, the utility of Rusch et al. (1982) and Alper's (1985) findings is compromised by the fact that both used a questionnaire format in which employers were simply asked to agree or disagree that a particular behaviour was important to job success. Since the majority of behaviours included in both questionnaires had some obvious importance to work, and there was no mechanism for employers to indicate relative differences in importance, a high degree of consensus was forced. When both researchers simply rank-ordered skills on the basis of the number of respondents indicating each skill to be important, the result was that behaviours of only moderate importance were ranked as equal to behaviours of major importance. Furthermore, neither researcher attempted to systematically organize inventory items into related skill clusters to improve interpretability of their findings. A related problem was that both studies collapsed data over occupations, thus obscuring any differences in skill requirements between food service and janitorial occupations.

These problems were corrected in a recent survey reported by Salzberg, Agran, and Lignugaris/Kraft (1986) in which 170 Utah work supervisors of workers in five entry-level occupations were asked to rate the relative importance to job success, as well as the frequency of occurrence, of 23 social-vocational behaviours. Results were tabulated separately for each of the occupations. Employers' judgements about importance appeared to depend most often upon the extent to which specific behaviours were related to worker reliability and productivity. The mean rating for nonsocial production-related behaviours (e.g., getting to work on time, working at expected rates, etc.) was significantly higher than for task-related social behaviours (e.g., following directions, asking for appropriate assistance, responding appropriately to criticism, etc.). Nonproduction-related personal social behaviours (e.g., listening without interrupting, acknowledging, expressing appreciation to coworkers, etc.) were rated least important overall. Little relationship was noted between the rated frequency of a behaviour's occurrence in the workplace and its rated importance to job success.

Although a set of core production-related skills was found in the Salzberg, Agran et al. (1986) survey to be critical across all five entry-level jobs, some differences between occupations in both the relative importance and frequency of occurrence of some behaviours were also noted. For example, it was found that social behaviours were considered more important for kitchen helpers and food service workers than for janitors, dishwashers, and maids. Such differences were attributed to the fact that some jobs required less frequent interaction between coworkers, or between employees and customers than did other jobs. Salzberg and his colleagues suggested that the core of skills identified in their survey "could provide a base for a generically-applicable employment preparation curriculum for handicapped individuals" (p.313).

The methodology of the Salzberg, Agran et al. (1986) survey permitted a comparison of the relative importance of work-related behaviours both within and across a number of entry-level jobs. But the generalizability of Salzberg, Agran et al.'s findings may be somewhat compromised by the suggestion in Alper's (1985) study that survey data obtained from employers in one community or region may not be representative of another. In addition, the study is limited by the fact that only a rather small sample of work-related skills from the many that may be of real importance to employment survival were examined.

Another recent employer survey was carried out by Burton, Chavez, and Kokaska (1987). In this study 133 employers who had employed individuals with disabling conditions were interviewed with regard to their opinions on the importance of 22 employability skills derived from previous research (Burton & Bero, 1984). Employers were asked to rate the skills on the questionnaire using a 7-point Likert scale ranging from "1, most important" to "7, least important". For data analysis purposes, the sample of employers were classified into four groups according to broad occupational similarities (i.e., food service, custodial/maintenance, stock/construction, and miscellaneous). It was found that employers tended to rate those employability skills that relate to personal, social, and attitudinal behaviours as being of greatest importance. More specifically, over 50% of all the employers agreed on the relative ranking of the five most important skills (range of mean ratings: 1.39-1.80). In descending order of mean importance these five skills were: (1) be on time, (2) dependable, (3) pride in work, (4) respect for authority, and (5) getting along well with others. These five skills would appear to be generically important to work.

However, Burton et al. also found five skills to vary significantly in importance over occupational categories. These skills were: basic reading/math skills, being able to move quickly, demonstrating good grooming, demonstrating physical coordination, and having specific job skills. Basic academic skills, good physical coordination, and specialized specific job skills were significantly more important to employers in the Stock/Construction group than to employers in the other three groups. On the other hand, good grooming and being able to move quickly were far more important to employers in Food Services than to those in Custodial/Maintenance or Stock/Construction. Physical stamina was seen as more important by employers in both the Food Services and Stock/Construction groups.

All of the employer survey studies reviewed to this point were carried out researchers in the United States. This fact begs the question of whether the results of these studies have any relevance to the Canadian context. Unfortunately, although such a question is certainly justified, is not easily answered. On the one hand, Canadian researchers in the social sciences have long considered the results of American research studies to have relatively broad generalizability to the Canadian situation, since there are numerous and obvious similarities between our two peoples and cultures. On the other hand, it is also quite obvious that there are marked differences between our nations with respect to geography, cultural mosaic, language, population demographics, history, economics, politics, and legal systems; to name but a few areas of potential comparison. Surely there are as many differences between our nations as there are similarities. Given such contradictory facts with respect to the level of similarity between Canada and the United States, it would seem to this researcher that Canadian social scientists should only accept American research results as a basis for the development of research hypotheses which then must be directly tested within the Canadian context.

With respect to the present study, published Canadian research appears to be nonexistent. The author is aware of only one Canadian study to date that has surveyed Canadian employers of entry-level workers to determine what skills were most valued, but this study is as yet unpublished. Morrissey, Paul, Dion, and Dindblad (1984), as part of a more comprehensive study of employer attitudes and hiring practices in Calgary, Alberta, asked employers to rank 14 work-related behaviours and worker characteristics in order of their importance to success in unskilled employment. The 89 predominantly wholesale/retail and service industry employers who responded showed high agreement on the five most important behaviours: attendance, punctuality, reliability, quality and quantity of work. Unfortunately, this study was flawed by poor questionnaire design and, moreover, failed to provide data on employer expectations as a function of job type.

The data from these employer validation studies has been relatively consistent in finding that employers view production-related work skills as most important to success in employment. Overall, employers appear to most highly value skills related to worker safety, reliability, dependability, and speed and quality of production. Although still rated as quite important, employers appear to generally place a lower premium on production-related social skills such as following instructions, accepting supervisor criticism, and getting along with supervisors and coworkers. Nonproduction-related social skills as well as basic academic and living skills are generally seen as having little direct importance to success in low-skill, entry-level employment.

Another finding in these employer validation surveys is that there are apparently more similarities than differences between occupations in the skills seen as most important for employment success. It would seem that the basic skills most crucial for employment survival in the low skill, entry-level occupations commonly open to persons with moderate to severe mental disabilities are relatively generic across the many such occupations and, therefore, the development of generic work skills curricula may not be inappropriate.

When results of studies examining the common reasons for employee termination are compared to those from studies examining the most important skills for job survival a seeming contradiction becomes apparent. Workers with mental disabilities more often lose their jobs because of deficits in social skills than production skills, yet employers generally rate production skills as being more important to success in the workplace. However, this apparent contradiction may be readily explained in the light of the common finding that employers generally view workers with mental disabilities as slower to learn, slower to perform, and in need of more supervision than nondisabled workers (Fuqua, Rathbone, & Gade, 1984; Shafer, Hill, Seyfarth, & Wehman, 1987). Although employers view production skills as most important to job success, given their preconceptions regarding mentally disabled persons, it would seem likely that employers who are prepared to hire such workers would also be prepared to be somewhat tolerant of deficiencies in important production skills as long as the worker is reliable and dependable. But when serious work-related social skill deficits also become apparent, as is often the case for persons with severe mental disabilities, the employer is likely to feel he or she has little choice but to terminate the worker's employment. Thus few mentally disabled workers lose their jobs simply because they are a little slow in production, rather they lose their jobs when they are both slow and socially inept. In contrast, since it is likely that few mentally disabled workers are above average in their production-related skills and at the same time socially inept, it is not clear whether employers will tolerate serious work-related social problems in order to keep a hard working mentally disabled employee, although this may occur with many nondisabled workers.

Unfortunately the utility of the results from these employer validation surveys for the development of employment preparation curricula for mentally disabled persons are diminished by limitations in questionnaire design and comprehensiveness, the appropriateness and size of survey samples, or the failure to obtain data for a variety of different low-skill occupations commonly open to mentally disabled workers. As well there are indications that results obtained in one community or geographic region may not be fully generalizable to other communities or regions. This latter problem of poor generalizability from one region to another is a particularly serious issue for Canadian special educators and habilitators because little research has been done with Canadian employers.

Finally, no descriptive evaluation study has attempted to directly compare employer-generated importance ratings of employment survival skills for workers with mental disabilities to those for nondisabled workers. This lack in the research means that it remains undetermined whether there are differences in the relative importance assigned by employers to various work-related social and vocational behaviours as a function of the type of employee the employer is considering for the job. Should such differences be apparent, they would be a reflection of employers' preconceptions about mentally disabled persons since the basic skills required to successfully carry out a job should be identical for all employees. This type of direct comparison between employers' expectations for mentally disabled versus nondisabled workers is especially important in the light of the numerous attitude studies that have shown negative employer attitudes with respect to the employability of persons with mental disabilities (see Wilgosh & Skaret, 1987).

F. SUMMARY

Employment is an important facet of successful community integration for persons with disabilities of any kind (Wolfensberger, 1972). This knowledge has been the driving force behind a recent surge of research and demonstration projects which have shown that, with systematic on-the-job training and extensive on-site support and follow-up, even some persons with severe mental disabilities can be successfully employed in competitive jobs (e.g., Hill, Wehman, Kregel, Banks, & Metzler, 1987; Lagomarcino, 1986; Moss, Dineen, & Ford, 1986; Vogelsberg, 1986). Based on these relatively few successes many habilitation professionals have now come to view employment within competitive job sites as a feasible goal for most persons with mental disabilities. This new optimism among professionals regarding the ultimate outcome of habilitation efforts has already enhanced job expectations and competitive employment opportunities for a large number of disabled persons (Bellamy, Sowers, & Boureau, 1983; Matson & Rusch, 1986). Moreover, the successful demonstrations of community-based training and supported employment have led to increasing pressure to completely do away with sheltered workshops and facility-based transitional training programs (Bellamy, Sowers, & Bourbeau, 1983).

The author contends that such optimism is not yet strongly founded in reality. Even with state-of-the-art training in the workplace itself and a large amount of on-the-job support from vocational habilitation specialists, a good number of mentally disabled workers continue to lose their jobs. Many more who are placed into competitive employment from the more usual under-funded and under-manned habilitation programs that are currently existent will also experience job failure. In the shorter-term at least, the increasing emphasis on competitive employment outcomes in habilitation will place ever greater numbers of mentally disabled adults at-risk for job failure because the majority of habilitation agencies do not have the resources to provide the intensive on-the-job training and support that is provided by the successful University-Affliated demonstration projects. The reality of vocational habilitation for most mentally disabled persons will for some time continue to be facility-based, industrially-modelled employment preparation training followed by job placement with minimal on-site support and no long-term follow-up. Given this reality, the employment success of mentally disabled workers will continue to be largely dependent on their vocational competence at the time of entry into competitive employment. It is for this reason that the current emphasis on competitive employment outcomes for mentally disabled adults has made the question of which skills to include in employment preparation curricula more important than ever.

Within the field of vocational habilitation, three basic methods have been used to find out what factors are related to success in employment. One method compares successful and unsuccessful workers with respect to personal characteristics such as measured intelligence, personality traits and demographic variables. Another approach is to interview the employers or examine the work histories of individuals who have been fired from their jobs to determine common reasons for job failure. The third approach is to interview or survey experts in vocational training or the workplace (e.g., employers, supervisors, coworkers) to obtain descriptions or ratings of work-related behaviours with respect to their importance for success in the workplace. Whereas the first of these three approaches has failed to result in practical knowledge that can be directly applied to vocational training, the second approach has been somewhat more successful in generating practical knowledge about why mentally disabled workers lose their jobs. But it remains unclear whether simply preventing job loss is equivalent to employment success. The third method, on the other hand, has been used with some success to identify skills thought to be necessary for sheltered and competitive employment.

Although surveys of vocational experts have led to socially valid prescriptions for vocational training, their utility has to some extent been compromised by various methodological flaws. These have included such problems as: surveying the wrong experts, including too few or too narrow a range of work-related behaviours in survey questionnaires, failing to systematically group the behaviours found to be important into skill clusters so as to organize them for training, forcing employers to make dichotomous ratings of important versus not important rather than allowing for a range of responses, failing to survey a reasonably large sample of employers in more than one type of industry or occupation, collapsing data over a number of occupations, failing to specifically compare skill ratings for disabled workers to those for nondisabled workers, and failing to evaluate work-related behaviours on more than one dimension. Furthermore, the small number of studies completed to date limits their generalizability. This last point is a particular problem for Canadian habilitators because only one of these studies surveyed Canadian employers.

G. RESEARCH QUESTIONS

The two studies reported in the next two sections were designed to broaden the current knowledge-base with respect to what vocational and work-related social skills and worker characteristics are related to success in competitive employment within entry-level occupations. Both studies used subjective evaluation assessment methodology to survey Alberta employers of workers in eight low-skill occupations commonly available to persons with mental disabilities. The purpose of surveying Alberta employers was to gain information that would be specifically applicable in Alberta's vocational habilitation training programs and which would likely have greater generalizability to the broader Canadian context than the presently available American research data. In both studies a relatively broad sample of vocational and social behaviours were rated by employers and these were organized into a number of skill clusters.

Study One focussed on obtaining employers' opinions with respect to the importance of workers having certain skills within their repertoires for success in selected occupations. This first survey primarily attempted to answer the following two questions:

(1) What vocational and work-related skills and worker characteristics are believed by employers to be most important for the employment success of workers across the eight targeted occupations generally, as well as within each of the eight targeted occupations individually?

(2) Is there a difference in the rated importance of any skills as a function of whether or not the employer is considering a mentally disabled worker in the job at the time of rating?

Study Two focussed on obtaining employers' opinions with respect to the consequences of workers demonstrating deficits in those same skill areas that were initially examined in Study One. This second survey primarily attempted to answer the following questions:

(1) How many occurrences of failures or deficits in individual vocational and work-related social skills would employers permit new employees to demonstrate

before terminating their employment? Are there differences in employer tolerances for employee failings in certain skill areas as opposed to others? Are any such differences a function of occupation?

(2) How often do new employees demonstrate deficits in individual vocational and work-related social skills? Are there differences in the frequency of employee deficits in certain skill areas as opposed to others? Are any such differences a function of occupation?

(3) How serious do employers' perceive new employees' deficits in individual vocational and work-related social skills to be? Are there differences in the perceived seriousness of employee deficits in certain skill areas as opposed to others? Are any such differences a function of occupation?

Study Two also attempted to partially validate the results of Study One by asking employers to list the five skills they believed to be most essential to employment success in the occupation they selected for the survey as well as to list the five most common reasons for terminating the employment of workers in that occupation. Lastly, Study Two also attempted to obtain some data with respect to the length of formal probation and informal training periods for new employees as well as average length of job tenure.

STUDY ONE

III. PURPOSE

The broad purpose of Study One was to utilize a subjective evaluation procedure with a cross-section of Alberta employers to determine what basic work-related skills, behaviours and attitudes are considered most important for job survival in entry-level occupations within competitive employment settings.

The study was designed to overcome many of the shortcomings of previous studies in this area of vocational rehabilitation research by:

(1) Surveying employers in competitive business and industry as opposed to rehabilitation practitioners or educators.

(2) Surveying employers representing more than one industry and which hire workers in more than one of the common entry-level occupations.

(3) Surveying employers outside the United States of America.

(4) Collecting importance ratings data on job survival skills for both mentally disabled and nondisabled workers.

(5) Sampling a relatively large selection of potentially important work-related skills which are representive of a number of different skill areas or domains.

Two questions were specifically addressed by this initial study. The first question was whether the importance assigned by employers to individual work-related skills, behaviours and attitudes would vary as a function of the type of employee— that is, mentally disabled versus nondisabled— being considered in the job. The second question asked to what extent critical employment survival skills might differ between vaious entry-level occupations.

It was anticipated that Study One would result in important information that would be applicable to the development of valid generic as well as occupation-specific employment preparation curricula for use in high school and vocational rehabilitation facility programs for mentally disabled youth and adults.

IV. METHOD

A. PROCEDURE

A sample of 2600 Alberta employers in nine industry sectors were surveyed by mail in the Fall of 1985 using the Employment Survival Skills Inventory, forms A1, A2, B1, and B2 (Appendix A). A mailing list comprised of chief operating officers of Alberta corporations and businesses was obtained from a commercial marketing firm in Edmonton. The sample of employers was randomly divided into four subsamples of equal size, each assigned to receive one of four variants of the Employment Survival Skills Inventory (ESSI) (see pp. 69-72, this section).

Each of the employers in the sample was sent a survey package by first class mail that contained the following items: (1) one of the four variants of the ESSI; (2) a form letter signed by the Chairman of the Board of Western Industrial Research and Training Centre (cooperating agency) explaining the purpose and importance of the study and encouraging cooperation (Appendix B); (3) a letter signed by the researcher outlining the time that would be required to complete the inventory, promising confidentiality, and giving specific instructions to the person who would be completing the survey (Appendix C); and (4) a postage-paid, return-addressed envelope to be used in returning the completed inventory.

All survey packages were mailed out during August and September of 1985. No time limit was specified for responding to the survey, but respondents were encouraged to complete the inventory at their "earliest convenience". The majority of completed surveys were returned within three to four weeks of being mailed out. No completed surveys were received after December 1, 1985. No follow-up was attempted of those employers who failed to return completed surveys.

Survey Sample

The sample selected for this survey was comprised of Alberta employers who hire workers in eight low-skill, entry-level occupations. A sample of 2600 companies was drawn from a commercially available market planning data bank maintained by Contacts Influential International Corporation of Edmonton. This computerized data bank included listings for over 48,000 Alberta companies categorized according to Standard Industrial Categorization (SIC) codes and was purported by Contacts Influential to well represent the Alberta economy of 1984 on the basis of type, size and location of individual firms. The actual survey mailing list was generated by selecting 100 SIC minor industry groups that were believed by the researcher to include individual companies likely to hire persons in one or more of the eight occupations targeted by the survey. Contacts Influential was then directed to randomly draw 30% of the company listings available within each of the selected minor industry groups. This sampling procedure resulted in a mailing list of 2600 companies, some from all nine SIC Industry Sectors.

The number of companies included in each of the nine SIC Industry Sectors are listed in Table 1 (next page). As may be seen from Table 1, companies in the Wholesale & Retail Trade, and the Community, Business & Personal Services sectors of the economy accounted for over half (53.2%) of the survey packages mailed out. This proportion closely matches the representation of these industry sectors (approximately 57%) in the economies of Edmonton and Calgary, the two largest urban centres in Alberta.

TABLE 1.

Survey Mail-Out Categorized by Industry Sector

Industry Sector	*n*	% of *N*
Agriculture/Forestry/Fishing	49	1.9%
Mining/Quarrying/Oil	125	4.8%
Construction & Trades Contracting	239	9.2%
Manufacturing/Packaging/Chemicals	382	14.7%
Transportation/Communications/Utilities/Sanitation	78	3.0%
Wholesale & Retail Trade	822	31.6%
Finance/Insurance/Real Estate	229	8.8%
Community, Business & Personal Services	562	21.6%
Public Administration	114	4.4%
TOTAL SAMPLE	2600	100.0%

Questionnaire Development

Two behaviour rating inventories, the Employment Survival Skills Inventory, forms A1/A2 and B1/B2, were developed for use in Study One. Each of these two ESSI forms required respondents to rate a different set of work-related skills, behaviours and attitudes on their importance to employment success in eight entry-level occupations. To evaluate the possibility of differences in importance ratings on these work-related behaviours as a function of whether the employee in the job does or does not have a mental disability, each form of the ESSI was designed in two variants. Variants A1 and B1 required respondents to rate behaviours with respect to their importance for the employment success of the "average person", whereas variants A2 and B2 required respondents to rate behaviours with respect to their importance for the employment success of a "mentally disabled" person. In all other aspects, variant A1 was identical to variant A2, and variant B1 was identical to variant B2.

Both forms A and B of the ESSI were adapted from a 135-item inventory, the Employment Survival Skills Rating Scale, that was used in a previous research study which attempted to determine what basic vocational and work-related social skills are viewed as most important to employment success by Alberta vocational habilitation professionals (Mueller, Wilgosh, & Dennis, 1987). The original Employment Survival Skills Rating Scale (Appendix D) consisted of statements describing work-related behaviors, skills and attitudes that could be individually rated on their importance for employment success using a 7-point Likert scale. The statements included in this rating scale were selected from a larger pool of 250 items that included all the skills contained in the *Occupational Survival Skills Questionnaire* (Nelson, 1977a, 1977b), the Prevocational Assessment and Curriculum Guide (Mithaug, Mar, & Stewart, 1978), the *Affective Work Competencies Inventory* (Kazanas & Beach, 1978), the *Industrial Model Vocational Training Systems* (Ebert & Crocker, 1978), the *Social-Interpersonal Checklist* (Foss & Peterson, 1981), as well as a number of skill statements obtained from an earlier survey of Alberta vocational and transitional training programs for mentally handicapped adults (Mueller & Wilgosh, 1985). This initial item pool was carefully examined for redundant behaviour statements— those describing the same skills or behaviours in slightly different words— and in instances where redundant statements were noted, only the most generically worded statement was retained for inclusion in the Employment Survival Skills Rating Scale. This procedure resulted in the retention of 135 items.

Based on the author's experience with the original Employment Survival Rating Scale (see Mueller, Wilgosh, & Dennis, 1987), and in response to advice from local business people who recommended keeping any questionnaire to be used with business managers as short as possible, it was decided to reduce the number of items to be included in the revised rating scales that were being developed for the present study. A substantial reduction in the number of statements to be included in the revised scales was achieved by deleting all items in the original scale that had item to total scale intercorrelations of less than 0.20 based on response data obtained from vocational habilitation professionals by Mueller, et al. (1987), as well as through a process of combining separate but similar or related items into broader statements whenever possible. These two procedures resulted in a reduction from the original 135 items contained in the Employment Survival Rating Scale to only 100 items for inclusion in the revised scales. These remaining 100 items were then randomly divided into two sets of 50 items each, one set to comprise form A of the new Employment Survival Skills Inventory and, the other set, to comprise form B. The random assignment of items between the two forms was to ensure that they would be equivalent with respect to their sampling of the original domain of 100 items.

To permit some estimation of response similarity between groups responding to form A versus form B of the ESSI, eight of the 100 items were included in both forms. Thus, each of the two forms of the ESSI contained 46 unique items as well as eight items in common with the other form, for a total of 54 items. These eight cross-validity check items were selected on the basis of item response data from the earlier study by Mueller, et al. (1987) such that they would likely represent low, moderate, and high importance ratings.

Although both forms of the ESSI required respondents to rate predominantly different behaviours, they were designed to be identical in all other aspects (refer to Appendix A). Both inventories were to be completed by employers that hire workers into the following eight entry-level occupations: (1) Kitchen Helper; (2) Laundry Labourer; (3) Materials Handler, General;

(4) General Labourer, Assembly; (5) Office Boy/Girl; (6) Cleaner, Commercial and Industrial; (7) Counterman, Fastfood and Cafeteria; and
(7) Construction/Tradesman's Helper. (Note: These occupational titles will henceforth be shortened to: Kitchen, Laundry, Handler, Assembly, Office, Cleaner, Fastfood, and Construction.) These eight occupations were selected to broadly represent those occupations commonly open to individuals with mental disabilities (Becker, 1976; Fair, 1980; Kiernan & Ciborowski, 1986; Wehman, Kregel, Seyfarth, 1985). Each variant of the ESSI listed all eight entry-level occupations and gave brief descriptions of each occupation (see Appendix A). The job titles and descriptions used were derived directly from the *Canadian Classification and Dictionary of Occupations* (Employment & Immigration Canada, 1977). All variants of the ESSI instructed respondents to first select one of the occupations in which their firm normally hires workers, and then rate the listed 54 work-related skills and behaviours for their importance to employment success in the selected occupation. Importance ratings were accomplished using a 5-point Likert scale with points labelled "1– No Importance", "2– Minor Importance", "3– Moderate Importance", "4– Major Importance", and "5– Absolutely Essential".

Upon completion of the behaviour ratings, respondents were asked to respond to a series of demographic questions relating to themselves and their respective firms. Respondents were not required to identify themselves by name, although those wishing to receive a brief summary report of survey results were asked to give their name and mailing address.

Data Analysis and Recoding Procedures

All data analyses were carried out using various descriptive and comparative statistical procedures available in the SPSS$_X$™ computer software package (Release 2.2) (see Nie, Hull, Jenkins, Steinbrenner, & Bent, 1983; SPSS$_X$ Inc., 1986). All procedures were run on the University of Alberta Michigan Terminal System (MTS) operating an Amdahl 5870 mainframe computer. SPSS$_X$™ procedures "Freqencies", "Condescriptive", "Crosstabs", and "Oneway" were used to carry out item response analyses, descriptive analyses of respondent demographic data, as well as to examine relationships between demographic variables and compare respondent group means on demographic variables. The main analyses on importance rating data were carried out using the "MANOVA", "ANOVA", "Oneway", and "*t* - Test" procedures.

Since the design of the study was complex, with numerous criterion variables (ratings on items) and three classification variables or grouping factors (survey form, employee type, occupation), it was considered necessary to apply multivariate methods to the data analysis problem. However, to permit the use of multivariate analysis of variance procedures in the analysis of importance rating data, it was essential to reduce the number of criterion variables under consideration. This was accomplished by grouping the individual behaviour statements included in the two forms of the ESSI into a smaller number of "skill clusters", each comprised of items appearing to tap a similar dimension of work-related behaviour. The initial categorization of behaviour statements into skill clusters was completed by the researcher by means of the Q-sort method. All 108 ESSI behaviour statements (100 unique plus 8 repeats) were individually typed on separate index cards and then rationally grouped by the researcher into categories describing different dimensions of work-related skills and behaviours.

This procedure was repeated a number of times until the researcher achieved an apparently logical and reliable categorization of ESSI items into 13 skill clusters which could then be given descriptive names (see Table 5, pp. 86-90). Once the researcher was satisfied with the categorization of the ESSI items, the procedure was repeated by three independent sorters to assess the reliability of the 13 skill clusters (see pp. 76-78).

Once the 108 ESSI items had been recategorized and grouped into skill clusters (criterion variables), the main analyses of importance rating data focussed on examining differences in the 13 criterion variables as a function of the three classification variables. This examination was carried out using a sequential analysis procedure recommended by Timm (1975). Timm's procedure combines the traditional Least Significant Difference (LSD) procedure for interpreting group differences (see Cramer & Bock, 1966) with the Bonferroni method for providing protection from inflated Type I error rates on multiple dependent univariate tests (see Harris, 1975).

To evaluate the possibility of significant differences between skill cluster means the analysis proceeded as follows. First, a Hotelling's multivariate *t*-test was carried out to test the assumption of equality of the multivariate means. Second, a significant T^2 statistic was followed up by a series of univariate dependent samples two-tailed *t*-tests comparing skill cluster means collapsed over occupations. To protect these univariate tests from inflated Type I error, the critical *t*-value for the tests was adjusted using a Bonferroni procedure in which the nominal alpha is divided by the number of contrasts (α/g) (Harris, 1975, pp. 103-105).

To evaluate the possibility of significant differences between occupations with respect to skill cluster importance ratings the analysis proceeded as follows.

First, a three-way MANOVA was carried out to test the hypothesis of no differences in skill cluster mean centroids as a function of the three grouping factors: survey form (A vs B), employee type (mentally disabled vs nondisabled), and occupation (Kitchen, Laundry, Handler, Assembly, Office, Cleaner, Fastfood, Construction). The analysis design was fully factorial with 32 non-empty cells. The Pillai-Bartlett Trace (V) was selected as the test statistic for the MANOVA because it is considered to be the most powerful and robust statistic in situations where the data show the diffuse structure and heterogeneity of variance common to research in the behavioural sciences (Olson, 1976).

Second, all significant multivariate interactions and main effects were examined further by means of one-way and multi-way univariate *F*-tests on each of the 13 criterion variables. Experiment-wise Type I error for these univariate tests was controlled by means of a Bonferroni procedure in which the nominal alpha is divided by the number of variates in the study (α/p). Each individual *F*-ratio is then compared to the critical *F*-value for this adjusted alpha (Bray & Maxwell, 1982). In the case of factors with more than two levels (such as the occupation factor with eight levels) significant univariate effects on the individual skill clusters were followed by Scheffé post-hoc contrasts.

The MANOVA model was chosen because importance ratings for the 13 skill clusters are not completely independent of each other[1] To some extent, the importance assigned to individual skills and behaviours within one skill cluster are affected by ratings given to items in other skill clusters. Although the full factorial MANOVA is a more conservative and less powerful technique than individual three-way ANOVAs on each of the skill clusters, unlike the ANOVA approach, the MANOVA model accounts for nonindependence of the criterion and classification variables and is, therefore, the preferred method of analysis. To some extent the power of the MANOVA can be improved by setting the criterion alpha for the test at the 0.05 rather than 0.01 level.

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[1] The hypothesis that the ratings on the 13 skill clusters were independent of each other was assessed for both forms A and B of the ESSI with Bartlett's test of sphericity. Statistically significant results for both sets of skill clusters ($p < .001$) indicate that skill cluster importance ratings are significantly intercorrelated.

Inventory Item and Skill Cluster Reliability

The reliability of the recategorization of ESSI items into skill clusters was assessed by having three persons independently sort the individual ESSI statements into the 13 skill clusters originally derived by the researcher. The three independent sorters included a professor of educational psychology, a senior researcher at a vocational habilitation facility, and a habilitation practitioner working as a training supervisor in an employment preparation program for persons with mental and physical disabilities. Each sorter was given a randomly ordered set of ESSI item cards as well as a list of the 13 skill cluster names and was asked to sort all ESSI items into the 13 clusters such that no items remained unsorted. The raw results of the three sorters' efforts are presented in Appendix E.

Due to its ease of calculation and interpretation, the most popular method of estimating interrater reliability is percentage agreement (Hollenbeck, 1978). However, percentage agreement fails to report chance agreement levels and may therefore produce biased estimates of agreement (Hartmann, 1977). For the present study it was deemed likely that percentage agreement would lead to biased estimates of agreement between raters because the number of items included in each the 13 skill clusters represented varying portions of the total number of items being sorted (4% to 16%). For this reason, interrater reliability was assessed by means of the kappa (κ) correlation statistic (Cohen, 1965) which provides an estimate of agreement between judges or raters corrected for chance. When judges agree on categories at the same level one might expect on the basis of chance alone, κ will equal 0. If agreement surpasses the expected chance level, κ will exceed 0 and approach a maximum of +1.00 (Kazdin, 1982).

Interrater reliability data (see Appendix E) were converted to kappa values by means of the formula:

$$\kappa = \frac{P_o - P_c}{1 - P_c}$$

where P_o represents the proportion of agreements between judges on occurrences and nonoccurrences, or in the present case, the number of items placed into the cluster by both the researcher and independent sorter, divided by the number of items placed in the cluster by either the researcher or the independent sorter; and where P_c represents the proportion of expected agreements on the basis of chance, or in the present case, the number of items placed into the skill cluster by the researcher divided by the total number of items available for categorization, all multiplied by the number of items placed into the cluster by the independent sorter divided by the total number of items available for categorization.

Table 2 presents calculated kappa values comparing each of the three independent sorters' item categorizations against those of the researcher for each of the 13 skill clusters, as well as mean kappa values for each skill cluster across the three sorters. Although one sorter (#3) generally demonstrated less agreement with the researcher than did the other two, the independent sorters generally demonstrated good agreement with the researcher with respect to the placement of individual ESSI items into skill clusters. The mean kappa values for individual skill clusters over sorters ranged from a low of 0.77 for the "Production" skill cluster, to a high of 1.00 for the "Safety" and "Self-Control" skill clusters. The grand mean of the kappa values over all skill clusters and sorters was an acceptable 0.89.

TABLE 2.

Interrater Reliability for Categorizing ESSI Items into Skill Clusters as Originally Derived by the Researcher

		Kappa Values (κ)			
	Skill Clusters	Sorter 1	Sorter 2	Sorter 3	Mean k
1	Personal Appearance, Hygiene & Health	0.80	1.00	1.00	0.93
2	Safe Work Behaviour & Safety Awareness	1.00	1.00	1.00	1.00
3	Basic Prevocational & Practical Skills	1.00	0.78	1.00	0.93
4	Attendance & Punctuality	0.71	1.00	0.83	0.85
5	Adaptability, Flexibility & Learning Proficiency	0.87	0.75	0.78	0.80
6	Production Efficiency, Quantity, Quality & Consistency	1.00	0.75	0.57	0.77
7	Emotional & Behavioural Self-Control	1.00	1.00	1.00	1.00
8	Affective Response to Supervision & Criticism	1.00	1.00	0.75	0.92
9	Dependability, Reliability & Ability to Work Unsupervised	0.81	0.83	0.71	0.78
10	Ability to Follow Instructions, Rules & Schedules	0.83	1.00	0.83	0.89
11	Ability to Organize or Manage Information, Materials or Persons	1.00	0.90	0.90	0.93
12	Work Attitude, Work Ethic & Commitment to Work	1.00	0.93	0.57	0.83
13	Work-Related Social & Interpersonal Skills	0.89	1.00	0.85	0.91
	GRAND MEANS:	0.92	0.92	0.83	0.89

NOTE: Tabled numbers represent correlations between sorters based on Cohen's (1965) kappa (κ) statistic.

As one method of assessing the level of similarity in the response patterns of employers on the two alternate forms of the ESSI, eight of the 108 behaviour statements were included in both forms. Based on experience with earlier versions of the ESSI, these cross-validity check items were selected so as to represent behaviours likely to be viewed by employers as having high, medium, and low importance to job survival. If the employer groups responding to the two forms of the ESSI are indeed similar, then one would expect their responses on the eight items common to both forms to also be very similar. Table 3 presents mean importance ratings, standard deviations, as well as a breakdown of the percent of employers who selected each of the five response categories for the eight cross-validity check items.

TABLE 3.

Mean Importance Ratings, Standard Deviations, and Response Patterns for Cross-Validity Check Items

ESSI		Importance		Percent of Employers Selecting Each Response Category				
Form	Behaviour Statement	Mean	*SD*	1	2	3	4	5
A41	Stays awake at work station.	4.67	0.66	0.8	0.8	3.3	20.7	74.4
B54	Stays awake at work station.	4.77	0.48	0.0	0.0	2.5	18.3	79.2
A54	Is punctual.	4.06	0.82	0.0	5.8	13.2	50.4	30.6
B18	Is punctual.	4.34	0.72	0.0	2.5	6.7	45.0	45.8
A27	Works hard even when no one is watching.	3.88	0.77	0.8	3.3	21.5	56.2	18.2
B39	Works hard even when no one is watching.	4.17	0.65	0.0	0.0	14.2	55.0	30.8
A21	Does not take extra breaks during work.	3.83	0.82	0.8	4.1	26.4	48.8	19.8
B27	Does not take extra breaks during work.	3.98	0.86	1.7	2.5	20.0	48.3	27.5
A10	Helps coworkers when asked to do so.	3.94	0.76	0.0	2.5	24.0	50.4	23.1
B53	Helps coworkers when asked to do so.	3.99	0.73	0.0	3.3	16.7	57.5	22.5
A47	Able to tell time from a watch or clock.	3.17	1.25	9.9	22.3	26.4	23.1	18.2
B26	Able to tell time from a watch or clock.	3.25	1.29	10.8	19.2	25.0	24.2	20.8
A26	Able to keep good and complete records.	2.83	1.26	16.5	28.1	22.3	22.3	10.7
B4	Able to keep good and complete records.	2.89	1.40	21.7	22.5	16.7	23.3	15.8
A53	Often says nice things of other people.	2.45	1.07	20.7	35.5	24.8	16.5	2.5
B11	Often says nice things of other people.	2.58	1.14	21.7	25.0	32.5	15.8	5.0

NOTE: Data in the five right-hand columns represent the proportion of employers selecting each category of Likert rating scale; where 1 = No Importance, 2 = Minimum Importance, 3 = Moderate Importance, 4 = Major Importance, and 5 = Absolutely Essential.

A careful examination of Table 3 reveals the means and standard deviations of the individual cross-validity check items to be quite similar across both ESSI forms. A one-way ANOVA comparing the vector of importance ratings for the eight check items across ESSI forms (A vs B) failed to reach statistical significance ($F_{(1/239)} = 1.23$, $p = 0.27$). Moreover, a comparison of the distribution of importance ratings for each of the cross-validity check items across the two ESSI forms reveals that the proportion of respondents selecting each of the five response categories was quite similar for any given item. Such similarities in responding to the eight items common to the two ESSI forms suggest that the group of employers who received form A of the ESSI would have responded similarly on form B than did those who actually completed form B; and vice versa.

V. RESULTS

A. SURVEY RESPONDENTS

Of the 2600 survey packages mailed out to employers, 432 (16.6%) were returned by Canada Post as undeliverable. The majority of these survey packages were returned because the firms they were addressed to had either gone out of business or had moved their offices without arranging to have mail redirected. These undeliverable survey packages were most often addressed to smaller firms, many in the oil and gas services sector of the economy. Although the Contacts Influential data base is updated every six months, an undeliverable rate of 10-12% is apparently typical within the commercial mailing list industry (M. Billings, President, Contacts Influential, personal communication, January 26, 1986). It is probable that the higher than usual undeliverable rate for the present study was a reflection of the severe economic recession that Alberta was undergoing as a result of collapses in world oil, gas, and agricultural prices at the time of the survey.

Of the 2168 survey packages and inventories that apparently reached their destinations, only 241 (11.1%) inventories were completed and returned. Returns for the four variants of the ESSI were as follows: A1 ($n = 60$), A2 ($n = 61$), B1 ($n = 62$), B2 ($n = 58$). A chi-square analysis of the observed number of returns for each of the four ESSI variants versus the expected number of returns per variant (60.25) revealed no significant bias in returns (χ^2 [df 3, $n = 241$] = 0.15, p = 0.99).

Although the overall return rate of 11% was quite low (see Borg & Gall, 1983) and may limit the validity of the obtained data as well as its generalizability

generalizability to the originally selected sample of 2600 employers, no systematic bias in returns as a function of industry sectors was apparent (see Table 4, p. 83). Only the return rate from the Mining/Quarrying/Oil sector appeared markedly different from expectations (1.7% of returns vs 4.8% of mail-out). However, a chi-square test of the overall distribution of returns for the nine industry sectors against the expected distribution of returns (proportion of 2600 surveys mailed to each industry sector times total returns) was not significant, indicating that the proportion of total returns for each sector closely modelled the proportion of mailings to each sector (χ^2 [*df* 8, *n* = 239] = 13.41, *p* = 0.10)[2]. This concordance suggests that the survey respondents may reasonably well represent the originally selected sample of employers with respect to industry. However, caution must still be used in interpreting the results of this survey since returns may have been biased by other unknown factors; for example, whether or not employers were sympathetic to persons with mental disabilities. Moreover, as should be clear from the sample selection process, the employers included in the original mail-out cannot be considered truly representative of the population of all Alberta employers.

The 241 survey respondents were most often male (70.5%) business owners, chief executives, or upper-level managers (72.6%) who directly supervised workers (78.0%) and had many years of experience in their positions (M = 7.6 yrs; *SD* = 6.6 yrs). The mean age of respondents was 39.7 years (*SD* = 10.7 yrs) and the majority (70.1%) indicated that they had graduated from either community college or university.

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[2] Two responses with industry sector unknown were deleted from the analysis.

TABLE 4.

Survey Mail-Out Versus Returns by Industry Sector

	Mail-Out (N = 2600)		Returns (N = 241)	
Industry Sector	*n*	% of *N*	*n*	% of *N*
Agriculture/Forestry/Fishing	49	1.9	3	1.2
Mining/Quarrying/Oil	125	4.8	4	1.7
Construction & Trades Contracting	239	9.2	20	8.3
Manufacturing/Packaging/Chemicals	382	14.7	33	13.7
Transportation/Communications/Utilities /Sanitation	78	3.0	9	3.8
Wholesale & Retail Trade	822	31.6	71	29.5
Financial/Insurance/Real Estate	229	8.8	18	7.5
Community, Business & Personal Services	562	21.6	69	28.6
Public Administration	114	4.4	12	5.0
Unknown			2	0.8

The median size of respondents' firms was 14 employees (M = 380.4; range = 1 to 10,635; *SD* = 1291.6) and, as may be seen from Table 4 (above), over one-half of the respondents' owned or worked for companies in the wholesale/retail sales and community/business/personal service sectors of the economy. The majority of the companies represented by the respondents were not unionized (76.8%). The largest companies represented by the respondents were educational institutions in the community services sector and city administrations in the public administration sector.

There were few demographic differences between the respondents to form A of the ESSI and those to form B. Separate ANOVAs comparing form A respondents to form B respondents on the variables of sex, age, years of education, years of job experience, and company size (number of employees) revealed no significant differences. A chi-square test of the distribution of form A respondents versus that of form B respondents by industry sectors (χ^2 [*df* 8, $n = 239$] = 9.80, $p = 0.29$) also failed to attain statistical significance. In contrast, a chi-square test of the distribution of job titles for form A respondents versus the distribution of job titles for form B respondents was statistically significant (χ^2 [*df* 7, $n = 237$] = 20.11, $p < .01$); suggesting that the group of respondents to form B included a slightly greater proportion of business owners and upper-level managers than did the group of respondents to form A. This latter group including a slightly higher proportion of middle-level managers and front-line supervisors.

Thirty-nine (16.2%) of the companies represented by the respondents were reported to have one or more mentally disabled employees on staff at the time of the survey. No significant bias was noted in the number of companies reported to employ workers with mental disabilities as a function of ESSI form (A vs B) (χ^2 [*df* 1, $n = 239$] = 0.14, $p = 0.70$) or as a function of the type of employee rated (mentally disabled vs nondisabled) (χ^2 [*df* 1, $n = 239$] = 0.02, $p = 0.89$).

The number of survey returns by occupation rated were as follows: Kitchen (39), Laundry (19), Handler (55), Assembly (19), Office (34), Cleaner (34), Fastfood (21), and Construction (20). A chi-square test of the distribution of the rated occupations as a function of ESSI form (A vs B) revealed no significant bias (χ^2 [*df* 7, $n = 241$] = 3.80, $p = 0.80$) between the respondent groups in their selection of occupations for rating. Similarly, a chi-square test of the distribution of the rated occupations as a function of the type of employee being rated (mentally disabled vs nondisabled) also failed to attain statistical significance (χ^2 [*df* 7, $n = 241$] = 7.28, $p = 0.40$).

B. IMPORTANCE RATINGS DATA

This section will report the results of various tests evaluating differences between the 13 skill clusters with respect to their rated importance to employment survival. As well as evaluating skill cluster rating differences overall, the effects of

ESSI form, employee type, and occupation factors on skill cluster ratings will be examined and reported.

The grand mean of the importance ratings for all items in form A of the ESSI was 3.79 with a standard deviation of 0.44 and a range of 2.20 to 4.95. For form B, the grand mean of the ratings was 3.81 with a standard deviation of 0.46 and a range of 2.26 to 4.77. The standardized item alpha reliability for the two forms of the ESSI was calculated as 0.89 and 0.90, respectively. Correlations between individual skill clusters and the total ESSI ranged from a low of 0.25 for the "Safety" skill cluster to a high of 0.77 for the "Work Attitude" skill cluster, with a mean correlation of 0.40.

Table 5 (next page) presents the mean importance ratings and standard deviations for all ESSI items and skill clusters. Skill clusters are ordered from most to least important. Inventory items are grouped below the skill cluster into which each was categorized. Within skill clusters, individual inventory items are ordered by mean importance rating, from most important to least important. For example, in the "Appearance" skill cluster the item receiving the highest mean importance rating was "Able to participate in the work environment for a full work day"; whereas the item receiving the lowest mean rating was "Dresses appropriately for work". The first column in Table 5 identifies the ESSI form and relative placement of each inventory item. For example, the item "Maintains good personal health" appears as item #50 in form A of the ESSI; whereas the item "Dresses appropriately for work" appears in form B of the ESSI as item #50. Items identified by a √- mark are cross-validation check items common to both forms of the ESSI.

TABLE 5.

Mean Rated Importance and Standard Deviations of ESSI Items and Skill Clusters

	ESSI Item	Skill Clusters and Inventory Items	Mean	*SD*
C2		**SAFE WORK BEHAVIOUR & SAFETY AWARENESS.**	**4.21**	**0.96**
	B41	Pays attention in dangerous work areas.	4.31	1.13
	A40	Follows safety rules and procedures.	4.30	0.95
	A39	Demonstrates safe work habits and behaviours.	4.27	0.82
	B42	Responds appropriately to verbal safety signals.	3.96	1.16
C4		**ATTENDANCE & PUNCTUALITY.**	**4.16**	**0.65**
	B19	Demonstrates good attendance at work.	4.42	0.64
	B23	Notifies supervisor of intended absence from work or when necessary to leave work station.	4.36	0.73
	B18	√ Is punctual.	4.34	0.72
	A54	√ Is punctual.	4.06	0.82
	B20	Returns from breaks on time.	4.01	0.92
	A16	Does not have to be reminded to begin work.	4.00	0.79
C9		**DEPENDABILITY, RELIABILITY & ABILITY TO WORK UNSUPERVISED.**	**4.08**	**0.50**
	B54	√ Stays awake at work station.	4.77	0.48
	A41	√ Stays awake at work station.	4.67	0.66
	A19	Is dependable.	4.31	0.68
	B9	Reliably completes all assigned tasks.	4.31	0.70
	B8	Completes all work on time.	4.19	0.76
	A38	Initiates contact with supervisor when cannot do task required, runs out of necessary materials, or makes a mistake.	4.12	0.73
	B43	Remains attentive to task at hand.	4.04	0.75
	B40	Initiates contact with coworker when needing help with a task.	3.98	0.76
	A22	Remains at work station as required.	3.85	0.91
	A37	Seeks necessary supervision or assistance.	3.79	0.84
	A36	Able to work without frequent supervision.	3.74	0.82
	A20	Able to work continuously without leaving work station inappropriately.	3.74	0.84
	B25	Able to make basic job decisions on own.	3.53	0.89
C1		**PERSONAL APPEARANCE, HYGIENE & HEALTH.**	**3.91**	**0.78**
	B21	Able to participate in work environment for a full work day.	4.15	0.92
	A50	Maintains good personal health.	4.04	0.72
	A49	Demonstrates appropriate grooming and personal hygiene.	4.00	1.03
	B51	Washes hands after using the lavoratory.	3.74	1.30
	B50	Dresses appropriately for work.	3.53	1.05

(Continued next page)

TABLE 5. (continued)

	ESSI Item	Skill Clusters and Inventory Items	Mean	SD
C12		**WORK ATTITUDE, WORK ETHIC & COMMITMENT TO WORK.**	**3.86**	**0.44**
	A2	Does not try to avoid work or cut corners.	4.28	0.61
	B39	√ Works hard even when no one is watching.	4.17	0.65
	A8	Completes work even when boring.	4.11	0.68
	B38	Accepts responsibility for own work performance.	4.03	0.69
	B22	Does not request or take time off from work without good cause.	4.03	0.85
	A9	Does not leave work for others to do.	4.02	0.74
	B2	Demonstrates pride in the work he or she does.	4.02	0.78
	B3	Demonstrates loyalty to the employer.	4.00	0.82
	B27	√ Does not take extra breaks during work.	3.98	0.85
	A27	√ Works hard even when no one is watching.	3.88	0.77
	A21	√ Does not take extra breaks during work.	3.83	0.82
	A34	Does not complain about what he or she is required to do.	3.82	0.80
	A1	Demonstrates positive attitude and works cheerfully.	3.79	0.77
	B1	Works faster to finish a job when required.	3.73	0.88
	B44	Works hard to reach new work goals.	3.53	0.94
	A3	Willing to do more than the minimum required.	3.50	0.80
	B28	Demonstrates initiative and imagination on the job.	2.89	1.04
C10		**ABILITY TO FOLLOW INSTRUCTIONS, RULES & SCHEDULES.**	**3.85**	**0.78**
	B30	Follows instructions.	4.47	0.63
	B29	Follows rules.	4.23	0.72
	B24	Able to follow a daily work schedule.	4.13	0.77
	B31	Able to follow instructions with minimal demonstration.	3.76	0.82
	B34	Remembers to respond to instructions that require compliance after a specified time period.	3.68	0.85
	A24	Follows area work schedules.	3.64	0.93
C7		**EMOTIONAL & BEHAVIOURAL SELF-CONTROL.**	**3.84**	**0.73**
	A35	Works without displaying or engaging in disruptive behaviours.	4.17	0.72
	B36	Remains in control of own anger and frustration.	3.93	0.86
	A33	Does not remain angry or upset all day.	3.83	0.91
	B35	Able to remain calm under pressure.	3.65	0.87
	B37	Able to work under tension and pressure.	3.45	0.99
C6		**PRODUCTION EFFICIENCY, QUANTITY, QUALITY & CONSISTENCY.**	**3.80**	**0.68**
	B46	Demonstrates adequate rate and quality of production.	3.99	0.78
	A45	Demonstrates adequate consistency of production.	3.79	0.74
	A44	Completes previously learned repetitive tasks within normal limits.	3.74	0.68
	B47	Demonstrates adequate economy of time/motion on the job.	3.66	0.80

(Continued next page)

TABLE 5. (continued)

	ESSI Item	Skill Clusters and Inventory Items	Mean	*SD*
C8		**AFFECTIVE RESPONSE TO SUPERVISION & CRITICISM.**	**3.71**	**0.74**
	A28	Responds to instructions without work disruptive results.	3.75	0.73
	B52	Able to continue working without disruption when supervisor or coworkers are observing.	3.73	0.84
	A32	Able to respond to criticism without work disruptive results.	3.69	0.79
	A29	Makes required corrections without complaining.	3.67	0.77
C13		**WORK-RELATED SOCIAL & INTERPERSONAL SKILLS.**	**3.67**	**0.56**
	A13	Does not steal from coworkers or employer.	4.95	0.25
	B17	Takes care not to damage other people's property while working.	4.23	0.83
	B13	Does not verbally abuse or insult coworkers.	4.23	0.96
	A14	Behaves appropriately with coworkers of opposite sex.	4.21	0.96
	A51	Able to work without initiating unnecessary contact with members of the public.	4.06	0.82
	B53	√ Helps coworkers when asked to do so.	3.99	0.73
	A10	√ Helps coworkers when asked to do so.	3.94	0.76
	B14	Practices coutesy in all on-the-job situations and speaks respectfully to coworkers and supervisors.	3.93	0.88
	A11	Able to get along well with coworkers and supervisors.	3.88	0.74
	A25	Knows what an employer expects of him or her.	3.88	0.74
	B16	Avoids socially unacceptable language in the workplace.	3.81	1.10
	A12	Does not bother or pester others in the workplace.	3.79	0.86
	A15	Able to work without interrupting others.	3.73	0.74
	B12	Speaks cheerfully with coworkers and the public.	3.63	1.09
	B10	Works well in a group.	3.48	1.08
	A52	Able to work without initiating unecessary contact with supervisor or coworkers.	3.42	0.92
	B11	√ Often says nice things of others.	2.58	1.14
	A53	√ Often says nice things of others.	2.45	1.07
	B15	Joins coworkers for breaks.	2.26	1.15
C5		**ADAPTABILITY, FLEXIBILITY & LEARNING PROFICIENCY.**	**3.55**	**0.66**
	B32	Is accepting of new training.	3.88	0.93
	A43	Able to make changes to avoid further mistakes.	3.85	0.77
	A42	Demonstrates job flexibility.	3.47	0.90
	A31	Able to learn new job tasks by verbal instructions.	3.43	0.80
	B33	Able to learn new job tasks to proficiency with only a few hours of instruction.	3.43	0.85
	A30	Able to learn new job tasks by watching others perform task.	3.41	0.77
	B45	Able to adapt to new work routines with a minimum of supervisory contacts.	3.38	0.85

(Continued next page)

TABLE 5. (continued)

	ESSI Item	Skill Clusters and Inventory Items	Mean	*SD*
C11		**ABILITY TO ORGANIZE OR MANAGE INFORMATION, MATERIALS, OR PERSONS.**	**3.38**	**0.68**
	B5	Able to use information, materials, and equipment properly.	4.23	0.77
	A4	Takes care of equipment and leaves workplace neat.	3.89	0.76
	B7	Cleans own work station and participates in area clean-up.	3.87	1.00
	A6	Able to manage time and materials efficiently.	3.58	0.88
	A5	Able to keep own supplies in order.	3.40	0.94
	B6	Sets up own work station correctly.	3.33	1.05
	A7	Secures necessary work materials and keeps supplied with materials as the job progresses.	3.21	0.95
	B4	√ Able to keep good and complete records.	2.89	1.40
	A26	√ Able to keep good and complete records.	2.83	1.26
	A23	Shows ability to organize the work of others.	2.20	0.94
C3		**BASIC PREVOCATIONAL & PRACTICAL SKILLS.**	**3.37**	**0.88**
	A48	Able to communicate basic needs such as: thirst, hunger, sickness and toileting necessities.	4.22	0.91
	A17	Able to reach place of work by own arrangement.	4.20	0.96
	B49	Demonstrates basic skills in reading and spoken language.	3.46	1.14
	B26	√ Able to tell time from a watch or clock.	3.25	1.29
	B48	Able to recite personal information such as: name, telephone number, and address upon request.	3.20	1.36
	A47	√ Able to tell time from a watch or clock.	3.17	1.23
	A46	Has basic arithmetic skills.	2.87	1.20
	A18	Punches time card correctly.	2.71	1.56

An examination of Table 5 at the level of individual inventory items reveals average importance ratings for all items, regardless of ESSI form, to be relatively high. Only 9 items obtained mean ratings of less than 3.00 (3 = moderately important); whereas, in contrast, 39 items obtained mean ratings of 4.00 or greater (4 = major importance). This negative skew in the distribution of item ratings is not surprising since items were originally selected for inclusion in the ESSI on the basis of having some demonstrated importance to employment success in previous pilot research (Mueller & Wilgosh, 1985; Mueller, Wilgosh, & Dennis, 1987).

The single item considered by employers generally to be the most important for employment survival was, not surprisingly, (A13) "Does not steal from coworkers or employer". Almost 96% of the employers surveyed rated this item as "absolutely essential" for employment survival. This item was closely followed, in decreasing order of importance, by: (B54/A41) "Stays awake at work station", (B30) "Follows instructions", (B19) "Demonstrates good attendance", (B23) "Notifies supervisor of intended absence from work or when necessary to leave work station", and (B18/A54) "Is punctual". These behaviours were rated as "absolutely essential" or of "major importance" by no fewer than 90% of the employers. There was considerably less unanimity with respect to the rating of skills at the other end of the importance continuum. The five skills receiving the lowest mean importance ratings were rated as having "no importance" or "minimum importance" by between 50% to 62% of the employers.

Differences Between Skill Clusters

The first question to be examined with respect to the employers' importance ratings of skills in the 13 skill clusters was whether any of the skill clusters differed from each other in rated importance. The Hotelling's multivariate t-test procedure was used to test the assumption of the equality of multivariate means for the 13 skill clusters. The resulting significant T^2 statistic ($T^2_{(12/229)} = 697.69$, $F = 55.48$, $p < 0.05$) suggested that there were statistically significant differences in mean importance ratings between some of the skill clusters when all skill clusters were considered over the eight occupational groups simultaneously.

To determine which pairs of skill cluster means actually differed, the multivariate t-test was followed by a series of univariate tests comparing variable means. Differences in importance ratings for the 13 skill clusters were compared by means of dependent samples two-tailed *t* -tests using a Bonferroni procedure to adjust the nominal alpha value such that the overall probability of finding a significant result would be kept at the 0.05 level (Harris, 1975). With a possible 78 unique contrasts between the 13 skill clusters, the criterion alpha for each comparison was set at the 0.001 level and differences in means were compared to a critical $t_{(240)}$ equal to 3.15.

TABLE 6.

Results of Dependent *t* –Tests Comparing Skill Clusters on Mean Rated Importance

Skill Clusters

Upper right diagonal presents *t* values. With *df* = 240, critical value for $t \geq 3.15$

	C2	C4	C9	C1	C12	C10	C7	C6	C8	C13	C5	C11	C3
C2		0.82	2.13	**3.91**	**5.57**	**5.25**	**4.80**	**6.07**	**6.97**	**8.38**	**9.34**	**11.41**	**11.04**
C4	0.06		2.21	**4.54**	**8.90**	**7.10**	**6.03**	**7.89**	**9.23**	**12.50**	**13.03**	**18.08**	**13.72**
C9	0.13	0.07		**3.30**	**9.16**	**5.92**	**5.29**	**8.32**	**8.81**	**12.51**	**13.50**	**17.14**	**13.34**
C1	**0.30**	**0.24**	**0.17**		1.19	1.05	1.49	2.07	**3.60**	**5.76**	**7.00**	**9.16**	**8.77**
C12	**0.35**	**0.29**	**0.22**	0.05		0.30	0.56	1.71	**3.65**	**6.95**	**8.86**	**12.40**	**9.29**
C10	**0.36**	**0.31**	**0.23**	0.07	0.01		0.15	0.94	2.50	**3.60**	**5.95**	**9.68**	**7.64**
C7	**0.37**	**0.32**	**0.24**	0.07	0.02	0.01		0.71	2.53	**4.24**	**6.03**	**8.11**	**7.95**
C6	**0.41**	**0.35**	**0.28**	0.11	0.06	0.03	0.04		1.91	**3.23**	**6.23**	**8.77**	**7.29**
C8	**0.50**	**0.44**	**0.37**	**0.20**	**0.15**	0.13	0.13	0.09		1.11	**3.38**	**6.66**	**5.40**
C13	**0.54**	**0.49**	**0.42**	**0.25**	**0.19**	**0.18**	**0.17**	**0.14**	0.05		2.64	**6.45**	**5.49**
C5	**0.66**	**0.60**	**0.53**	**0.36**	**0.31**	**0.30**	**0.29**	**0.25**	**0.16**	0.11		**3.77**	3.07
C11	**0.83**	**0.78**	**0.70**	**0.53**	**0.48**	**0.47**	**0.46**	**0.42**	**0.33**	**0.29**	**0.17**		0.17
C3	**0.84**	**0.79**	**0.71**	**0.54**	**0.49**	**0.48**	**0.47**	**0.43**	**0.34**	**0.30**	0.18	0.01	

Lower left diagonal presents differences between skill cluster means.

NOTE: Boldface indicates differences significant at the 0.001 level of two-tailed probability. Skill cluster names may be identified from Table 5 (pp. 86-90).

Table 6 presents the results of the dependent samples univariate comparisons between skill cluster means collapsed over occupations. The upper right diagonal of the table presents the calculated values for Student's *t* with respect to differences in mean importance ratings between skill cluster pairs, while the lower left diagonal of the table presents actual differences scores for skill cluster pairs. Differences which were found significant at the 0.001 level of probability are printed in boldface. A brief perusal of the pattern of significant differences reported in Table 6 reveals that the 13 skill clusters may be reasonably well differentiated into four groups; organized heirarchically from most to least important. Skill clusters included within each of these four groups do not differ significantly from each other in rated importance but are rated significantly more important than those skill clusters included in subsequent groups.

The amount of overlap between the skill clusters within each of these four groups, as well as the amount of separation between groups of skill clusters, may be most readily seen in Figure 1 (next page). This figure plots mean importance ratings and associated univariate 95% confidence intervals for each of the 13 skill clusters collapsed over occupations, as well as the grand mean for the skill clusters. Individual skill cluster means are plotted from left to right in order of decreasing relative importance.The four groups are indicated in Figure 1 by boxes labelled "A" through "D". The first group includes the three skill clusters generally rated as being most important to survival in employment, namely: "Safety", "Attendance", and "Dependability". The next lower level of relative importance includes six skill clusters: "Appearance", "Work Attitude", "Instructions", "Self-Control", "Production", and "Affective Response". The third level of relative importance is defined by a group of two skill clusters: "Social Skills" and "Adaptability". Finally, the fourth level includes the two skill clusters rated by employers as being the least important for employment survival in entry-level occupations, namely: "Organization" and "Prevocational".

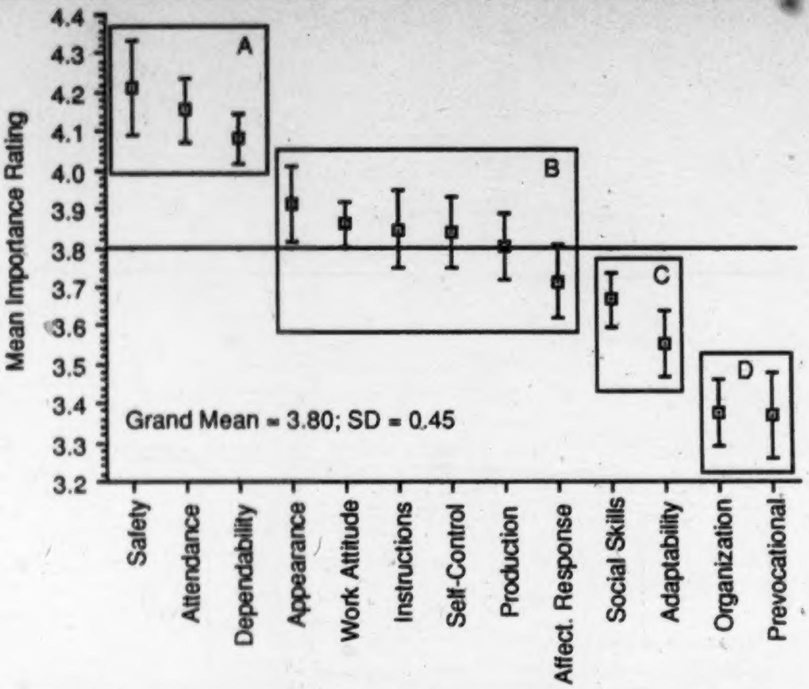

FIGURE 1. Mean importance ratings and associated univariate 95% confidence intervals for skill clusters collapsed over occupations.

Differences Between Occupations

The following subsections report the results of various tests evaluating differences between the eight entry-level occupations with respect to rated skill cluster importance.

Table 7 (next page) presents the results of a three-way full factorial design multivariate analysis of variance (MANOVA) on mean importance ratings. This MANOVA examined the main effects of three classification variables: survey form (A vs B), employee type (mentally disabled vs nondisabled), and occupation (Kitchen, Laundry, Handler, Assembly, Office, Cleaner, Fastfood, Construction) on 13 criterion variables– the vector of skill cluster mean importance ratings. As well, the MANOVA design included tests on three two-way interaction effects (survey form x employee type, survey form x occupation, employee type x occupation) and one three-way interaction (survey form x employee type x occupation).

TABLE 7.

Multivariate Analysis of Variance on Rated Importance of Skill Clusters by Survey Form, Employee Type, and Occupation

Source of Variance	Pillai's Trace	Approx. *F*-Ratio	Hypoth. *df*	Error *df*	Signif of *F*
MAIN EFFECTS:					
Survey Form (A, B)	.301	6.52	13.00	197.00	.000*
Employee Type (MD, NMD)	.108	1.84	13.00	197.00	.039*
Occupation (1-8)	.970	2.51	91.00	1421.00	.000*
TWO-WAY INTERACTION EFFECTS:					
Survey Form x Employee Type	.034	0.53	13.00	197.00	.902
Survey Form x Occupation	.602	1.47	91.00	1421.00	.003*
Employee Type x Occupation	.374	0.88	91.00	1421.00	.779
THREE-WAY INTERACTION EFFECTS:					
Survey Form x Employee Type x Occupation	.441	1.05	91.00	1421.00	.360

*Significant at or above the 0.05 level of confidence.

An inspection of Table 7 reveals that all three multivariate main effects (skills x survey form, skills x employee type, skills x occupation) as well as one of the three two-way interactions (skills x survey form and occupation) were statistically significant at the 0.05 level of confidence. None of the remaining second-order or third-order interactions attained significance. All effects tests were based on the Pillai-Bartlett Trace(V) statistic.

Analysis of Multivariate Main Effects

Three multivariate main effects were evaluated in the MANOVA design: namely, skill clusters by survey form, skill clusters by employee type, and skill clusters by occupation. All three main effects were found to be significant at the 0.05 level of confidence. Each significant multivariate main effect was followed by one-way ANOVAs on each of the criterion variables by individual classification variables. Because these second level univariate *F*-tests were were not protected for inflated Type I error rates when carrying out multiple tests on dependent samples, the Bonferroni method was used to adjust the critical alpha for each univariate test so as to maintain the experiment-wise alpha at the 0.05 level.

Main Effect for Survey Form. The significant multivariate first-order effect for the survey form factor indicates that there was a difference between the mean-centroids for the two ESSI forms (A vs B) when mean importance ratings of all 13 skill clusters were considered simultaneously (see Table 7, p. 94). To identify which individual skill clusters differed from each other as a function of survey form, the multivariate main effects test was followed by individual univariate *F*-tests on each of the criterion variables by the survey form factor (13 x 2).

Table 8 (next page) presents the results of the four univariate tests that attained statistical significance with alpha set at the 0.004 level. Although the grand mean of the importance ratings for the vector of skill clusters for form A of the ESSI (3.79) was significantly less than that for form B (3.81), only four of the 13 skill clusters— "Attendance", "Instructions", "Self-Control", and "Organization"— actually demonstrated significant differences in rated mean importance as a function of ESSI form. Table 8 reveals that these differences were generally in favour of form B. For the "Attendance", "Instructions", and "Organization" skill clusters the individual behavioural items comprising the clusters in form B were rated as significantly more important to employment survival than were the items that comprised the same skill clusters in form A. On the other hand, the two items comprising the "Self-Control" skill cluster in form A of the ESSI were rated as significantly more important than were the three items comprising the same cluster in form B.

TABLE 8.

Significant Univariate Tests on Rated Importance of Skill Clusters by Survey Form

C4. ATTENDANCE & PUNCTUALITY

Source	*df*	SS	MS	*F* -ratio	Prob.
Between	1	3.84	3.84	9.36	.003*
Within	239	97.97	0.41		
Total	240	101.81			

Form A: M = 4.03, *SD* = 0.69; Form B: M = 4.28, *SD* = 0.59

C7. EMOTIONAL & BEHAVIORAL SELF-CONTROL

Source	*df*	SS	MS	*F* -ratio	Prob.
Between	1	6.23	6.23	12.14	.001*
Within	239	123.15	0.52		
Total	240	129.41			

Form A: M = 4.00, *SD* = 0.66; Form B: M = 3.68, *SD* = 0.77

C10. ABILITY TO FOLLOW INSTRUCTIONS, RULES & SCHEDULES

Source	*df*	SS	MS	*F* -ratio	Prob.
Between	1	10.06	10.06	17.75	.000*
Within	239	135.54	0.58		
Total	240	145.60			

Form A: M = 3.64, *SD* = 0.93; Form B: M = 4.05, *SD* = 0.52

C11. ABILITY TO ORGANIZE OR MANAGE INFORMATION, MATERIALS, OR PERSONS

Source	*df*	SS	MS	*F* -ratio	Prob.
Between	1	9.35	9.35	22.25	.000*
Within	239	100.39	0.42		
Total	240	109.74			

Form A: M = 3.18, *SD* = 0.61; Form B: M = 3.58, *SD* = 0.68

*Significant at or above 0.004 level of confidence.

The overall pattern of comparative results may be most clearly seen in Figure 2 (next page) which presents a plot of skill cluster mean ratings as a function of ESSI form. Skill clusters are plotted from left to right in order of decreasing importance. Figure 2 also plots the grand means of the skill cluster ratings for both form A and form B.

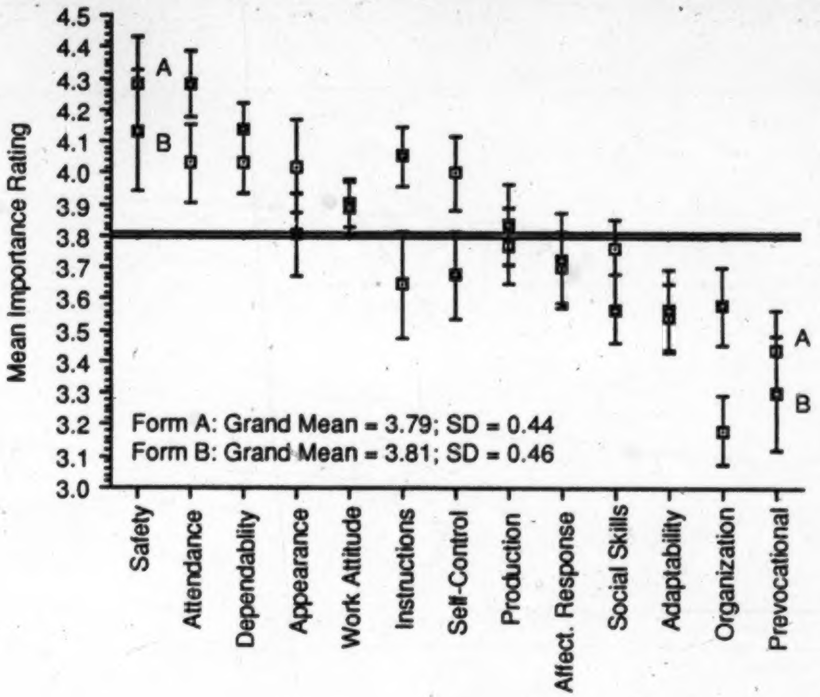

FIGURE 2. Mean importance ratings for skill clusters collapsed over occupations as a function of Employment Survival Skills Inventory, form A versus form B.

Main Effect For Employee Type. The obtained significant multivariate main effect for the employee type factor indicates that there was a difference in the mean centroids for the group of employers who rated skills for workers with mental disabilities compared to those who rated nondisabled workers, when all 13 criterion variables were considered simultaneously (see Table 7, p. 94). Although the difference between grand means was quite small in real terms; in statistical terms, the grand mean of the vector of skill cluster importance ratings for nondisabled workers (3.83) was significantly higher than that for workers with mental disabilities (3.77). This result suggests that employers tended to view many basic skills and behaviours as being somewhat less important for the employment success of workers with mental disabilities than for the employment success of nondisabled workers.

To determine if certain skill clusters were more affected than others by employers' consideration of employee type during their ratings of the importance of basic work-related skills for employment survival, the multivariate main effects test was again followed by univariate F-tests on each of the dependent variables using the Bonferroni method to control experiment-wise error. With the univariate alpha criterion set at 0.004, no significant differences were found in mean importance ratings for individual skill clusters as a function of the type of employee being considered by employers during skills rating. Only two skill clusters— "Safety" and "Organization"— approached but failed to attain statistical significance. Employers tended to rate skills in the "Safety" cluster as slightly more important for disabled as opposed to nondisabled workers, whereas the opposite pattern was apparent for employer ratings on the skills within the "Organization" cluster ($F_{(1/239)} = 6.83$, $p = 0.01$).

In the present case a significant overall MANOVA with no significant univariate results suggests that employers' tendency to rate many work-related social and vocational skills as being less important to the employment survival of workers with mental disabilities was not confined to specific competency areas or skill clusters but, rather, was a relatively broad-based bias that may reflect stereotypic beliefs with respect to persons with mental disabilities in the role of worker. This pattern of results may be most clearly seen in Figure 3 which plots skill cluster mean ratings as a function of the type of employee being rated by employers, as well as the grand means for both groups. Skill clusters are plotted from left to right in order of decreasing mean importance. A brief scrutiny of Figure 3 clearly shows that there was a general tendency for employers to rate skills as more important for disabled as opposed to nondisabled workers.

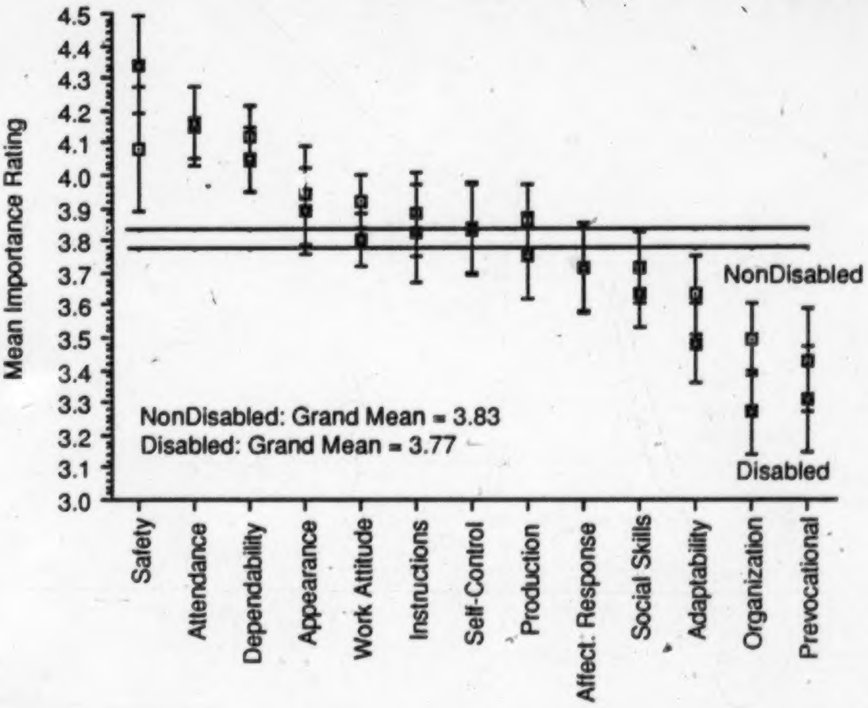

FIGURE 3. Mean importance ratings for skill clusters collapsed over occupations as a function of the type of employee (mentally disabled vs. nondisabled) rated by employers.

Main Effect for Occupation. The significant multivariate main effect that was obtained for the occupation factor indicates that there were differences in mean centroids as a function of the specific occupation being rated when all 13 skill clusters were considered simultaneously (cf., Table 7, p. 94). The grand mean importance ratings for each of the eight occupations taken over the 13 skill clusters were as follows: Kitchen (3.92), Laundry (3.56), Handler (3.85), Assembly (3.77), Office (3.80), Cleaner (3.78), Fastfood (3.93), and Construction (3.58).

To identify which individual skill clusters showed significant variations in mean importance as a function of occupation, the multivariate main effects test was followed by univariate *F*-tests on each of the 13 skill clusters by the occupation factor (13 x 8). Each of these univariate tests was protected from inflated Type I error by dividing the nominal alpha of 0.05 by the number of variables under consideration (13). With an adjusted alpha set at 0.004, significant univariate main effects for occupation were obtained for only two of the 13 skill clusters; namely, "Appearance" and "Safety". Both of these significant univariate main effects for the occupation factor were further examined by means of post hoc multiple comparisons using the Scheffé procedure. The criterion alpha for these post hoc contrasts was set at the 0.05 level, since the Scheffé method is quite conservative for pairwise comparisons of dependent means.

Table 9 presents the results of the univariate main effects test on mean importance ratings for the "Appearance" skill cluster by occupations, as well as the results of post hoc comparisons between occupations. In addition, the table presents mean importance ratings for the "Appearance" cluster and associated 95% univariate confidence intervals for each of the eight occupations. As may be seen, the significant main effect for the occupation factor was accounted for by differences between the two food service occupations and all other occupations with respect to the rated importance of skills in the "Appearance" cluster.

TABLE 9.

Univariate Main Effects Test on Rated Importance of "Personal Appearance, Hygiene & Health" Skill Cluster and Post Hoc Comparisons Between Occupations

C1. Personal Appearance, Hygiene & Health.

Source	*df*	SS	MS	*F*-ratio	Prob.
Between	7	35.77	5.11	10.94	.000*
Within	233	108.79	0.47		
Total	240	144.56			

Occupation	Mean	*SD*	95% C.I. for Mean			Multiple Comparisons ($p < .05$)
1 Kitchen	4.42	0.55	4.24	to	4.60	Occup1 > 3, 4, 2, 8
2 Laundry	3.44	0.79	3.06	to	3.82	Occup 2 < 1, 7
3 Handler	3.82	0.76	3.61	to	4.02	Occup 3 < 1, 7
4 Assembly	3.59	0.58	3.31	to	3.87	Occup 4 < 1, 7
5 Office	4.07	0.63	3.86	to	4.29	Occup 5 > 8
6 Cleaner	3.88	0.77	3.61	to	4.15	Occup 6 > 8
7 Fastfood	4.46	0.64	4.17	to	4.75	Occup 7 > 3, 4, 2, 8
8 Construction	3.15	0.67	2.85	to	3.45	Occup 8 < 6, 5, 1, 7

*Significant at or above the 0.004 level of confidence.

Examination of the mean rated importance of the skills in the "Appearance" skill cluster for each of the eight occupations targeted in the study reveals that behaviours related to maintaining acceptable standards of personal appearance, hygiene, and good health were viewed as being significantly more important to job survival in the two food service occupations than in such occupations as Laundry, Handler, Assembly, and Construction. Not surprisingly, employers of workers in the food services occupations appeared to view the individual cluster items related to demonstrating appropriate grooming and hygiene as well as washing hands after using the lavoratory as being especially important. By way of contrast, employers of workers in the Construction occupation considered these same skills and behaviours to be considerably less important to job survival than did employers of workers in the Cleaner, Office, Kitchen, and Fastfood occupations.

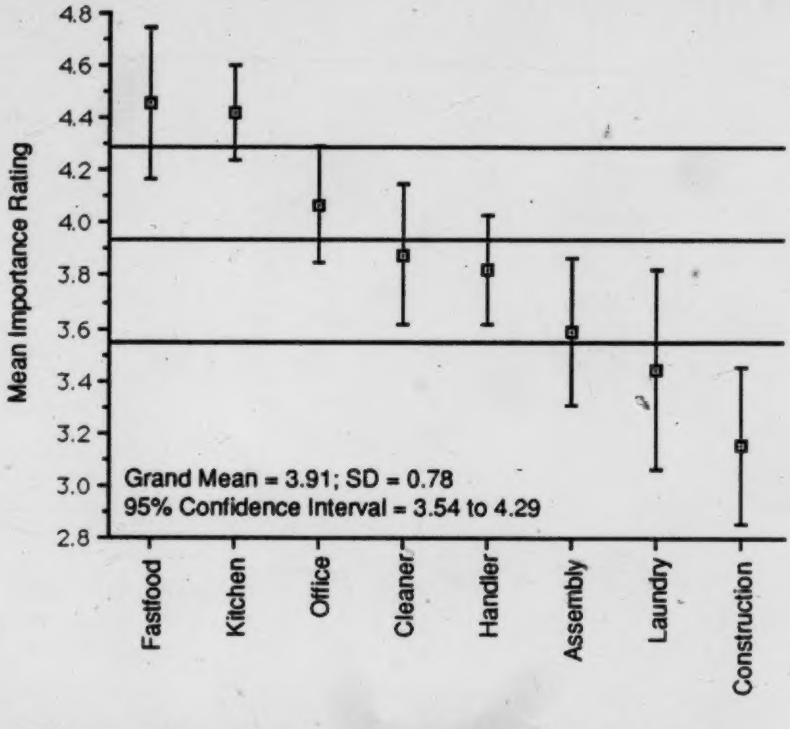

FIGURE 4. "Personal Appearance, Hygiene & Health" skill cluster. Mean importance ratings and associated univariate 95% confidence intervals as a function of occupation.

This pattern of results may be most readily seen in Figure 4 which presents a plot of mean importance ratings and associated univariate 95% confidence intervals for the "Appearance" skill cluster as a function of the occupations targeted by the survey. Figure 4 also plots the grand mean of the ratings for this skill cluster over occupations. Mean importance ratings for the skill cluster are plotted from left to right in decreasing order of importance. The only other skill cluster to show a significant univariate main effect as a function of the occupation rated by employers was the "Safety" skill cluster.

TABLE 10.

Univariate Main Effects Test on Rated Importance of "Safe Work Behaviour & Safety Awareness" Skill Cluster and Post Hoc Comparisons Between Occupations

C2. Safe Work Behaviour & Safety Awareness.

Source	*df*	SS	MS	*F*-ratio	Prob.
Between	7	49.79	7.11	9.70	.000*
Within	233	170.88	0.73		
Total	240	220.67			

Occupation	Mean	*SD*	95% C.I. for Mean			Multiple Comparisons ($p < .05$)
1 Kitchen	4.53	0.54	4.35	to	4.70	Occup 1 > 5, 7
2 Laundry	4.16	1.05	3.68	to	4.67	Occup 2 > 5
3 Handler	4.46	0.58	4.31	to	4.62	Occup 3 > 5, 7
4 Assembly	4.55	0.44	4.34	to	4.76	Occup 4 > 5, 7
5 Office	3.26	1.26	2.83	to	3.68	Occup 5 < 2, 6, 3, 1, 4, 8
6 Cleaner	4.28	0.81	4.00	to	4.56	Occup 6 > 5
7 Fastfood	3.69	1.32	3.09	to	4.29	Occup 7 < 3, 1, 4, 8
8 Construction	4.65	0.71	4.32	to	4.98	Occup 8 > 5, 7

*Significant at or above the 0.004 level of confidence.

Table 10 presents the results of the univariate main effects test and Scheffé paired comparisons for occupations on this skill cluster. Again, the critical alpha for the unprotected univariate *F*-test was set at 0.004 while the critical alpha for the protected Scheffé post hoc tests was set at the 0.05 level. A brief perusal of the mean importance ratings for the "Safety" skill cluster for each of the eight occupations reveals that employers generally rated this group of skills and behaviours as being very important to employment survival. However, there were some significant differences between occupations. For example, employers who hired workers in the Office and Fastfood occupations viewed skills related to job safety as significantly less important to job survival than did employers of workers in the Kitchen, Handler, Assembly, Cleaner, and Construction occupations. On the other hand, employers in the construction field viewed safety-related competencies as very important to job survival.

Figure 5 presents a plot of mean importance ratings and associated univariate 95% confidence intervals for the "Safety" skill cluster as a function of the different occupations targeted in the study. Again, the skill cluster means are plotted from left to right in decreasing order of relative importance.

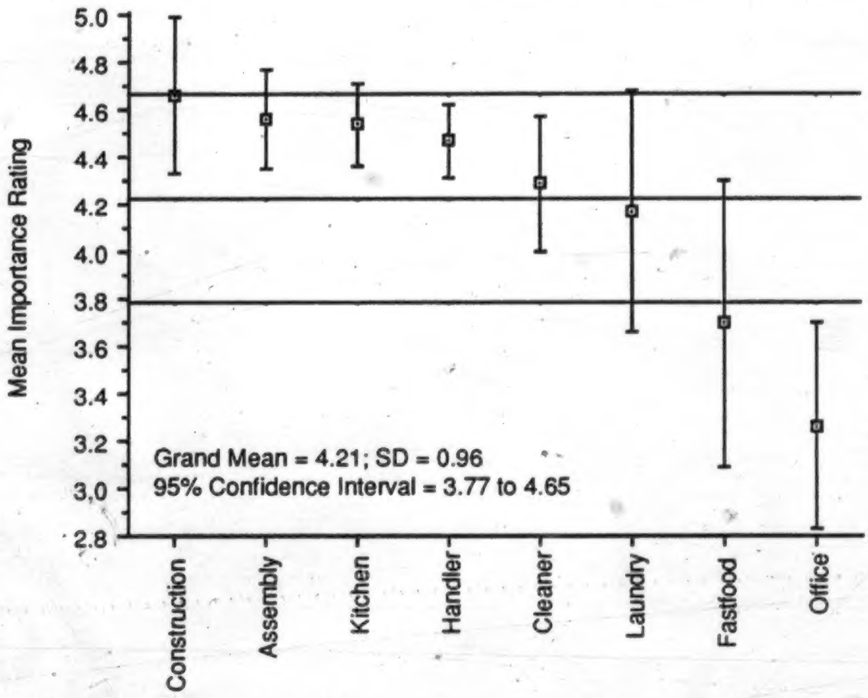

FIGURE 5. "Safe Work Behaviour & Safety Awareness" skill cluster. Mean importance ratings and associated univariate 95% confidence intervals as a function of occupation.

Analysis of Multivariate Interaction Effects

Three second-order (skills x survey form and employee type, skills x survey form and occupation, skills x employee type and occupation) and one third-order (skills x survey form and employee type and occupation) multivariate interaction effects were evaluated within the full factorial design MANOVA. Only one of these multivariate interaction effects was found to be statistically significant at the .05 level of confidence; namely, the interaction of survey form and occupation on skill cluster ratings (see Table 7, p. 94). To determine which skill clusters varied significantly in their rated importance to employment success as a function of survey form and occupation together, each of the 13 criterion variables was further evaluated by means of univariate *F*-tests using a two-way ANOVA model. Once again, the Bonferroni method was applied to determine a suitable adjusted alpha criterion for the individual univariate tests that would maintain the overall experiment-wise alpha at the 0.05 level.

The two-way tests on the individual criterion variables verified the previous results from one-way ANOVAs run on the criterion variables by each of the classification variables. That is, significant univariate main effects were obtained for the survey form factor on four skill clusters: namely, "Attendance", "Self-Control", "Instructions", and "Organization" (see Table 8, pp. 96), as well as for the occupation factor on two skill clusters: namely, "Appearance" (see Table 9, p. 101) and "Safety" (see Table 10, p. 103). However, only one significant univariate two-way interaction between the survey form and occupation factors was obtained. This interaction occurred on the "Appearance" skill cluster.

The results of the two-way ANOVA on the "Appearance" skill cluster are presented in Table 11 (next page). An examination of this table reveals a significant overall main effect for the survey form and occupation factors that accounted for 27% of the total variance, although only the one-way main effect for the occupation factor attained significance at this level of confidence ($\alpha = 0.004$). This single significant one-way main effect for occupation accounted for 25% of the total variance, whereas the nonsignificant one-way main effect for survey form accounted for only 2% of the total variance. Table 11 also shows a significant interaction between the two factors that accounted for 9% of the total variance.

TABLE 11.

Two-Way ANOVA on Rated Importance of "Personal Appearance, Hygiene & Health" Skill Cluster by Survey Form and Occupation

Source of Variance	Sum Squares	*df*	Mean Square	Exact *F*	Sig. of *F*
MAIN EFFECTS	38.86	8	4.86	11.76	0.000*
Survey Form	3.09	1	3.09	7.47	0.007
Occupation	36.07	7	5.15	12.47	0.000*
TWO-WAY INTERACTIONS					
Survey Form x Occupation	12.74	7	1.82	4.40	0.000*
EXPLAINED VARIANCE	51.59	15	3.44	8.32	0.000*
RESIDUAL VARIANCE	92.97	225	0.41		
TOTAL VARIANCE	144.56	240	0.60		

*Significant with alpha set at 0.004 level.

The interaction of survey form and occupation on the mean importance ratings for the "Appearance" skill cluster may be most readily seen in Figure 6 (next page) which presents a plot of mean importance ratings for the cluster as a function of ESSI form (A vs B) and occupation. An examination of this plot shows that employers who completed form A of the ESSI generally rated the items of the "Appearance" skill cluster as higher in importance than did those employers who completed form B. This pattern of difference is consistent for all but two groups of employers, those that hired workers in the Laundry and Assembly occupations. There was no difference between survey forms in the rated mean importance of the "Appearance" skill cluster for the Assembly occupation, and there was an inverse relationship for the Laundry occupation. For this latter group of employers (see box in Figure 6) who hire Laundry Labourers, those who completed form B of the ESSI (n = 11) rated behaviours related to maintaining acceptable personal appearance, adequate hygiene and good health as significantly more important to employment survival than did those who completed form A of the ESSI (n = 8).

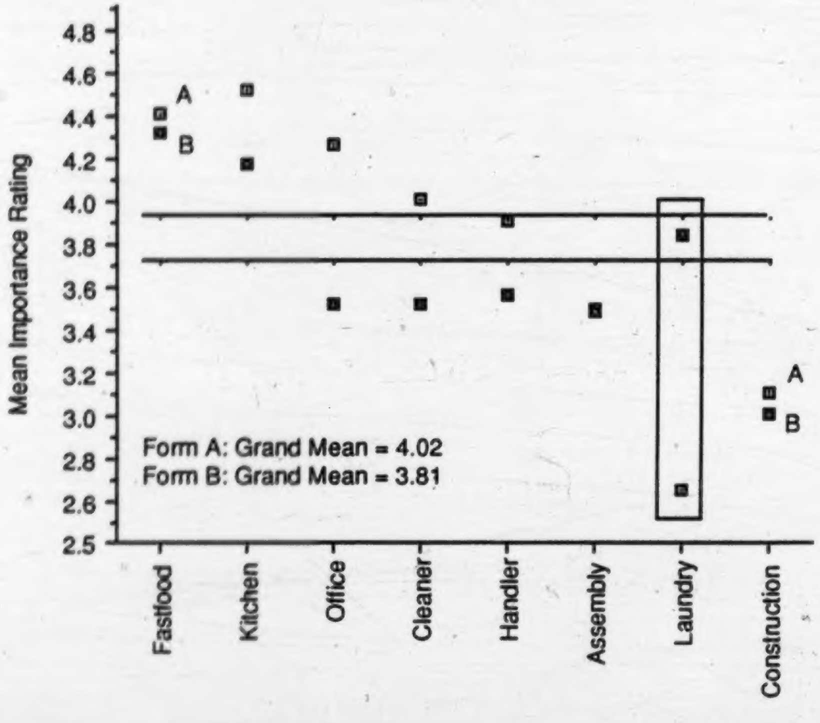

FIGURE 6. "Personal Appearance, Hygiene & Health" skill cluster. Mean importance ratings as a function of survey form and occupation.

TABLE 12.

Mean Rated Importance and Standard Deviations of Individual ESSI Items Included within the "Personal Appearance, Hygiene & Health" Skill Cluster

ESSI Form	Work-Related Skill	Laundry Labourers Mean	Laundry Labourers *SD*	All Occupations Mean	All Occupations *SD*
B21	Able to participate in work environment for a full work day.	4.27	0.79	4.15	0.92
A50	Maintains good personal health.	2.88	0.35	4.04	0.72
A49	Demonstrates appropriate grooming and personal hygiene.	2.63	0.74	4.00	1.03
B51	Washes hands after using the lavoratory.	4.36	0.92	3.74	1.30
B50	Dresses appropriately for work.	3.18	0.87	3.53	1.05

Table 12 presents the means and standard deviations of the importance ratings assigned to the individual items included within the "Appearance" skill cluster by both employers of Laundry Labourers and all employers. As may be readily seen, both "Appearance" items included in form A of the ESSI were rated as quite a bit less important than those in form B. As well, the Laundry group of employers who completed form A of the ESSI rated the two form A items quite a bit lower than the norm for all employers; whereas the Laundry group of employers who completed form B of the ESSI were far closer to the norm for all employers in their ratings of form B items. This pattern of results suggests that employers who hire laundry labourers perceive the maintenance of good personal health, and appropriate grooming and personal hygiene as having considerably less importance for job survival than do other employers, and as well, that this group of employers views these two skills as being far less important than the other skills comprising the "Appearance" skill cluster. Such a hypothesis makes little logical sense and, therefore, it would seem far more likely that the pattern of results for employers of laundry labourers on this particular skill cluster was solely due to chance.

VI. DISCUSSION

A multivariate comparison between the skill cluster importance ratings of employers completing form A of the ESSI versus those completing form B uncovered a small but statistically significant difference between the two forms overall. On average, the work-related skills and behaviours included in form B of the ESSI were rated as slightly more important to employment survival than were parallel items in form A. However, this was not an entirely consistent pattern. Follow-up univariate tests revealed this main effect to be the result of between-forms differences on only four of the 13 ESSI skill clusters, namely: "Attendance", "Self-Control", "Instructions", and "Organization". One of these differences— on the "Self-Control" skill cluster— was in favour of form A rather than form B.

Such differences between the two ESSI forms may have come about for a number of reasons, not all of them damaging to the assumption that the two forms assess equivalent domains of work-related skills and behaviours. One possible explanation for the differences between the two ESSI forms could be that the sample of employers who completed form A differ in some crucial aspect from those who completed form B. But in the present case such an explanation appears rather unlikely because the two ESSI forms were randomly distributed to all employers and post hoc analyses of demographic data revealed no significant differences between the two groups of employers. Most importantly, there were no significant differences between the two employer groups with respect to their ratings of the eight check-items common to both forms of the ESSI.

A second possible explanation for the main effect due to survey form is that the individual behaviour items comprising equivalent skill clusters may not be tapping the same behavioural domains across the two ESSI forms. However, this explanation may also be discounted. A careful examination of the items included within each of the four skill clusters under discussion revealed no obvious reasons to suspect that items assigned to a given cluster in one of the ESSI forms might be describing a qualitatively different class of skills than those items assigned to the same skill cluster in the other ESSI form. Moreover, the interrater reliabilities for these four skill clusters were all reasonably high (see Table 2, p. 78) which suggests that the individual items are relatively unambiguous with respect to which category or skill cluster they belong in.

In the light of poor support for both of the foregoing hypotheses, it would appear more likely that the differences in mean importance ratings for the four skill clusters across ESSI forms are simply artifacts of the chance distribution of the individual skill items between forms. By chance, not only did form B receive 11 of the 16 items included within the four skill clusters under discussion, but form B also received those items within each of the clusters that employers viewed as being most important to employment survival. Given the relatively few differences in skill cluster ratings as a function of ESSI form, and the fact that the relative rankings of the skill clusters in terms of their importance to employment survival were quite similar between forms, this investigator would argue that the multivariate main effect on skill cluster ratings as a function of ESSI form should not be overinterpreted. For all intents and purposes the two forms of the ESSI should be viewed as being equivalent forms.

The results of Study One show that over 90% of the work-related skills and behaviours represented within the two forms of the ESSI were viewed by the responding employers as having at least moderate importance to job survival in competitive entry-level employment. As was stated previously, since the items included within the ESSI were originally selected on the basis of having some demonstrated importance to work, a negative skew in importance ratings was expected and the fact that it occurred only serves to further confirm the findings of the prior research from which the ESSI items were drawn. However, some differentiation of work-related skills and behaviours was still apparent with respect to relative importance. Close examination of the ESSI items that were rated highest in importance for employment survival suggests that employers' judgements in this regard may be largely dependent on the extent to which specific skills and behaviours are related to the dimensions of worker dependability, reliability, and safety on the job. As a group, employers responding to both forms of the ESSI rated the triad of skill clusters— "Safety", "Attendance", and "Dependability"— as most important to job survival. The finding that behaviours related to these dimensions of employee behaviour and attitudes are perceived by employers as most important to job survival is in broad agreement with the findings of a number of previous studies (i.e., Burton, Chavez, & Kokaska, 1987; Morrissey, Paul, Dion, & Dindblad, 1984; Salzberg, Agran, & Lignugaris/Kraft, 1986).

In contrast to the foregoing, the employers who responded to the present survey generally rated the "Prevocational", "Organization", "Adaptability", and "Social Skill" skill clusters as having the least importance to employment survival in the entry-level occupations surveyed. Since the entry-level occupations included in the present survey involve predominantly uncomplicated and highly repetitive tasks that do not typically demand high-level work skills, it does not seem surprising that most employers viewed rudimentary academic skills as well as worker flexibility and learning proficiency as having little importance for job survival. Similarly, few of these jobs would likely demand a high level of organizing ability, especially with respect to organizing the work of other people. Given the lack of complexity of the surveyed jobs, it makes sense that employers might be reasonably tolerant of a lack of basic academic skills as well as an inability to quickly learn new job tasks or efficiently handle unusual job demands. This finding would appear to bode well for the employment success of many workers with mental disabilities, since academic skills, flexibility and efficient learning are not generally the strongest qualities of such individuals. Nevertheless, although these two skill clusters may not be crucial to maintaining an entry-level position, they are likely to play a much larger role in attaining promotion to more responsible and demanding positions which also pay better.

As noted in Chapter One, although some current researchers continue to point to low worker productivity (e.g., Rusch, 1983; Salzberg, Agran, & Lignugaris/Kraft, 1986) or poor employee attitude (e.g., Hill, Wehman, Hill, & Goodall, 1986) as primary factors in the job failure of a significant number of workers with mental disabilities, in recent years there has been an increasing emphasis within the vocational rehabilitation literature on the importance of social skills to employment success (e.g., Chadsey-Rusch, 1986). In contradiction to this recent emphasis, the results of Study One suggest that employers generally view behaviours related to safety on the job, employee dependability and reliability, and positive attitudes toward work as having greater importance to employment survival than the majority of social skills. In the present study most of the behaviours and skills categorized in the "Social" cluster were rated as only moderately important to employment survival by a majority of employers. However, an important exception to this general finding must also be noted. There was strong agreement among responding employers that a lack of serious anti-social behaviours (e.g., "Does not steal from employer or coworkers." "Takes care not to damage other people's property while working." "Does not verbally abuse or insult coworkers.") is very important to job survival. While such an attitude among employers does not strike this researcher as particularly surprising, this result is in stark contrast to Foss and Peterson's (1981) finding that job placement personnel in sheltered workshops view such behaviours (e.g., refraining from stealing money or property, behaving sexually in ways consistent with social norms, etc.) as being least relevant to job tenure.

Broadly speaking, the pattern of results with respect to the relative importance assigned to various work-related skills and behaviours by the employers who responded to the present survey shows good agreement with previous surveys of employers of unskilled and semi-skilled workers (e.g., Rusch, Schutz, & Agran, 1982; Salzberg, Agran, & Lignugaris/Kraft, 1986). For such occupations, employers appear to most highly value production-related work skills related to worker safety, reliability and dependability on the job. Also highly valued are positive attitudes towards work in general and an absence of serious antisocial behaviours. General social skills, particularly those that are not directly production-related, are not as highly valued. At the bottom end of the continuum, employers view the presence of basic academic skills, organizational abilities, as well as worker flexibility and learning proficiency as having the least importance to employment survival.

This general pattern for employers contrasts rather sharply with results from surveys of educators (e.g., Nelson, 1977b), who tend to place a higher premium on basic academic skills, worker initiative and imagination, and seem to view production-related skills as having relatively little importance to job attainment and tenure. Vocational rehabilitators, on the other hand, show better agreement with employers on the relative importance of basic academic skills, but tend to rank nonproduction-related social skills and basic living skills as more important to employment success than do employers (e.g., Johnson & Mithaug, 1978; Mithaug & Hagmeier, 1978). Vocational rehabilitators would also appear to better tolerate a high need for employee supervision than do most employers (Rusch, Schutz, & Agran, 1982).

With respect to the question of whether employers' ratings of the importance of work-related skills would vary as a function of whether the employee considered in the job was mentally disabled or not, the results were somewhat mixed. Although the individual skills necessary to successfully carry out a specific job should logically remain invariant between different workers, when all 13 skill clusters were considered simultaneously using multivariate procedures, a small but statistically significant difference was apparent between those employers who were asked to rate the importance of the ESSI skills for the employment survival of workers with mental disabilities and those asked to rate the importance of the ESSI skills for the employment survival of nondisabled workers. The grand mean importance rating over skill clusters for the latter group of employers was slightly greater than the grand mean for the former group of employers. However, there were no significant differences between the two groups of employers when individual skill clusters were examined by means of more conservative univariate statistics. In short, employers rated many individual skills as being slightly less important to the employment survival of an employee with mental disabilities than to a nondisabled employee, but this tendency was not limited to any specific skill areas or clusters.

This pattern of results suggests a broad tendency toward minimizing the importance of work-related skills for employees with mental disabilities which is manifest relatively equally across the 13 skill clusters of the ESSI. While such a tendency might be interpreted to mean that employers are prepared to be slightly more tolerant of skill deficits in employees with mental disabilities, its very existence suggests the presence of stereotypical attitudes toward persons with mental disabilities. In a recent review of the literature on employer attitudes toward hiring disabled workers, Wilgosh and Skaret (1987) pointed out that there is an extensive body of research which suggests that employers with little or no experience with disabled employees tend to focus on perceived limitations of individuals due to their disabilities, rather than their capabilities as employees. Minimizing the importance of certain job skills when the individual being considered for the job has a mental disability is likely another indication of this inappropriate focus on disability rather than ability. Employers may rate certain skills as less important to the job success of mentally disabled workers because they perceive such workers to be only capable of successfully carrying out downgraded versions of the same occupations as nondisabled workers. That is, most employers probably expect more of nondisabled kitchen helpers, for example, than they do of a mentally disabled worker in the same job. Given that an employer has lower expectations with respect to the job tasks that a worker might be able to carry out, it is not at all farfetched for that employer to perceive relatively higher level work skills as having less importance for the job success of this worker.

Examination of employer ratings of skill importance to job survival as a function of occupation revealed far fewer occupation-related differences than expected. Although there was a significant multivariate main effect for the occupation factor, univariate follow-up revealed that this effect was due to occupation-related differences on only two skill clusters— "Appearance" and "Safety". No other skill clusters showed significant differences in rated importance to employment survival as a function of the occupation being considered by the employer during completion of the rating task. Employee behaviours related to maintaining acceptable standards of personal appearance, hygiene, and good health were seen as significantly more important to employment survival in the two food services occupations, particularly when compared to Construction, Laundry, and Assembly occupations. In a similar fashion, employee behaviours related to safety on the job, although viewed as very important by all employers, were seen as especially important to job survival by employers of workers in the Construction, Kitchen, and Handler occupations. This was especially evident when employer ratings for these three latter occupations were contrasted with ratings for the Fastfood and Office occupations.

Broadly speaking, the lack of differences due to occupation lends support to a generic model of work-related basic skills in the entry-level occupations. The finding of a high degree of consistency in importance ratings over different types of jobs is in general agreement with the findings of Salzberg, Agran et al. (1986). Although Salzberg, Agran et al. did not examine behaviours directly related to safety on the job or personal appearance, hygiene and health, they did note that the greatest consistency in behaviour ratings across different jobs occurred for "nonsocial productivity-related behaviours" and "task-related social behaviours" and that the least consistency was apparent for behaviours in the "personal-social" category. This latter category of Salzberg, Agran et al. would appear to be the one in which personal appearance, hygiene and health items might have gone, had they included such items in their survey.

A. SUMMARY

The main findings of Study One may be briefly summarized as follows:

(1) Although the majority of the 108 work-related skills included within the ESSI were rated as being at least moderately important to success in entry-level occupations, employers generally rated skills and behaviours included within the "Safety", "Attendance", and "Dependability" skill clusters as being most important to job survival. Skills and behaviours included within the "Prevocational", "Organization", "Adaptability", and "Social Skills" clusters were generally seen as having the least importance. Although with respect to the "Social Skills" cluster, the absence of serious anti-social behaviours was seen as extremely important to job survival.

(2) Except for the "Appearance" and "Safety" skill clusters, no significant differences in the rated importance of skill clusters were noted between the various entry-level occupations. This lack of occupational differences supports the view that the skills included within the ESSI are generic to entry-level occupations.

(3) A small, albeit statistically significant, overall difference was found between the importance ratings of employers who rated skills for mentally disabled workers versus those who rated skills for nondisabled workers. Those employers who were asked to consider a worker with mental disabilities in the job for which skills were being rated tended to rate many skills as slightly less important to job success than did those employers who were asked to consider a nondisabled worker in the same job. This bias in importance ratings was not relegated to any specific group of skills or skill clusters but rather was apparent on numerous individual skill items across all 13 skills clusters. It was

argued that this bias reflects a tendency for employers who lack experience with disabled individuals to focus on perceived disabilities rather than abilities.

STUDY TWO

VII. PURPOSE

In Study One a broad cross-section of Alberta employers were asked to rate a number of basic vocational and work-related social skills with respect to a single dimension— namely, their importance to job success in competitive employment. The primary purpose of this initial survey was to determine what skills employers perceived to be most important to the maintenance of entry-level employment as well as the extent to which the relative importance of these work-related skills might vary from one occupation to another. A secondary purpose was to evaluate the extent to which employers' perceptions of skill importance might vary as a function of whether or not the employees under consideration in the job were mentally disabled. It was anticipated that these data would have significant implications for the development of vocational training curricula for use with persons who are mentally disabled.

However, the data collected in Study One were somewhat limited. Although knowledge about employers' perceptions with respect to the relative importance of various employee skills and behaviours for job success is certainly a necessary prerequisite to the process of selecting appropriate training objectives for inclusion in vocational training curricula, it is not sufficient. To develop effective vocational curricula one must not only know what skills are important to train, but also the basic performance level required for each skill and the natural consequences associated with demonstrated incompetence in each skill area.

The main purpose of the present study— Study Two— was to further extend the knowledge-base on the vocational and social skills necessary for successful entry-level competitive employment that was acquired from Study One. This goal was to be accomplished by presenting a second mail survey— the Employment Survival Skills Standards Survey— to a subsample of the group of employers that responded to the ESSI in Study One. This second questionnaire, the Employment Survival Skills Standards Survey, was focussed on determining the employment consequences for employees who were lacking in the skills found to be important for job success in Study One. More specifically, in the Standards Survey, employers were asked to respond to a list of skill deficits derived from the items of the Employment Survival Skills Inventory used in Study One. In Study Two, for each of the skill deficits listed within the Standards Survey, employers were asked to: (1) specify the number of occurrences permissible before a new employee would be fired, (2) rate the frequency of occurrence in new employees and, (3) rate the perceived seriousness of occurrence in new employees. The number of skill deficit occurrences permissible prior to employee termination and the ratings of perceived seriousness would act as broad indices of employers' relative tolerance for various work-related skill deficits or employee failings within entry-level occupations during the initial on-the-job training period for new employees. In addition, employers' ratings of the frequency of skill deficit occurrence would give some indication of how common each skill deficit or employee failing might be among new employees.

A secondary purpose of Study Two was to further validate the data obtained with the Employment Survival Skills Inventory in Study One. This validation would be accomplished by asking employers to list the most essential skills for job success as well as the most common reasons for terminating employees in the selected entry-level occupations. It seems only reasonable to expect that the skills employers list as essential to job success on the Standards Survey will closely match those skills rated on the ESSI in Study One as being most important to job success. Similarly, employer's most common reasons for terminating employees should reflect deficits in those skills rated as most important for job survival on the ESSI.

The Standards Survey was also used to obtain data for entry-level occupations with respect to the frequency and length of formal employee probation periods, the length of time required to fully train new employees to the production and competency standards of the employer, and average length of job tenure.

VIII. METHOD

A. PROCEDURE

A sample of Alberta employers in nine industry sectors were surveyed by mail in the Summer of 1986 using the Employment Survival Skills Standards Survey (Appendix F). All employers were initially contacted by telephone and asked if they would be willing to receive and complete the Standards Survey. All who agreed were sent a survey package by first class post that contained the following items: (1) a copy of the Employment Survival Skills Standards Survey; (2) a form letter signed by the Chairman of the Board of Western Industrial Research and Training Centres (sponsoring agency) explaining the purpose and importance of the survey and encouraging cooperation (see Appendix B); (3) a letter signed by the researcher outlining the time that would be required to complete the survey, promising confidentiality, and giving specific instructions to the person who would be completing the survey (Appendix G); (4) a sheet giving descriptions of the eight entry-level occupations targeted by the survey (Appendix H); and (5) a postage-paid, return-addressed envelope to be used in returning the completed survey.

All survey packages were mailed in 1986 during the month of June. Respondents were asked to complete and return their survey questionnaires within three weeks of receipt. No attempt was made to contact employers who failed to return completed questionnaires. No surveys were returned by employers after August 10th.

Survey Sample

The group selected for the Study Two survey was a subsample (62.7%) of the 241 employers that had previously responded to the mail survey carried out in Study One. This subsample was comprised of 151 Alberta employers who had both completed the Employment Survival Skills Inventory in Study One and had identified themselves to request a report of results. (None had as yet received feedback on the first survey.).

Although a chi-square analysis of the observed distribution by industry of these 151 employers versus their expected distribution (based on the industry distribution of the 241 respondents to the ESSI in Study One) revealed no significant bias between the two distributions (χ^2 [*df* 8, $n = 151$] = 4.40, $p = 0.82$), in a number of other respects this sample was likely a biased representation of the those employers who responded to the Study One survey. For example, it is possible that those employers who asked to have survey results sent to them were more sympathetic toward issues related to the job training of persons with disabilities. The possibility of such sampling biases counsel caution in the interpretation of these data.

Of the initial pool of 151 potential respondents, a total of 134 employers (88.7%) were successfully contacted by telephone. Each of these employers was thanked for his or her cooperation in Study One and then asked if he or she would be willing to receive and complete a second questionnaire on employment skills. Slightly more than 70% (106) of the employers agreed to do so and were subsequently sent a survey package. Table 13 presents a breakdown by industry sectors of the initial sample of 151 potential survey respondents as well as the 106 employers who actually agreed to receive the Standards Survey after being contacted by the researcher. A chi-square analysis of the observed industry distribution of the 106 employers who agreed to receive questionnaires versus their expected distribution (based on the distribution of the 151 potential survey respondents) revealed no significant bias (χ^2 [*df* 8, $n = 106$] = 2.55, $p = 0.96$).

TABLE 13.

Breakdown by Industry Sector.Employers Contacted Versus Those Agreeing to Accept Standards Survey

	Contacted (*N* = 151)		Agreed (*N* = 106)	
Industry Sector	*n*	% of *N*	*n*	% of *N*
Agriculture/Forestry/Fishing	2	1.3	2	1.9
Mining/Quarrying/Oil	4	2.6	3	2.8
Construction & Trades Contracting	13	8.6	9	8.5
Manufacturing/Packaging/Chemicals	14	9.3	10	9.4
Transportation/Communications/Utilities/Sanitation	8	5.3	6	5.7
Wholesale & Retail Trade	43	28.5	24	22.6
Financial/Insurance/Real Estate	13	8.6	11	10.4
Community, Business & Personal Services	46	30.5	35	33.1
Public Administration	8	5.3	7	6.6

Questionnaire Development

The behavior rating inventory developed for use in the present study— the Employment Survival Skills Standards Survey— was based on the Employment Survival Skills Inventory (ESSI) that was originally developed for use in Study One. Whereas the original ESSI was focussed on determining what skills were essential for employment survival, the Standards Survey was designed primarily to collect data on how frequently new employees demonstrate deficits in the essential skills identified by the ESSI, as well as the extent to which employers tolerate such employee deficits and failings.

The original ESSI required employers to select one of eight entry-level occupations for which they hired workers and then rate a number of work-related behaviors on their importance for employment survival in the occupation selected. The Standards Survey used in the present study was constructed by combining and modifying the work-related behavior statements included in the ESSI to express behavioural deficits in social and vocational skills that could result in job failure or involuntary termination. In most cases, except for those changes necessary to turn a skill statement into a deficit statement, the wording of ESSI items was kept substantially the same (e.g., the ESSI items "Completes work on time." and "Does not verbally abuse or insult coworkers." were respectively modified in the Standards Survey to "Fails to complete work on time." and "Verbally abuses or insults coworkers."). In a few cases, two separate ESSI items from the same skill cluster were combined into one skill deficit statement (e.g., the ESSI items "Initiates contact with supervisor when cannot do task required, runs out of necessary materials, or makes a mistake." and "Seeks necessary supervision or assistance." were modified and combined to form the single deficit statement, "Fails to initiate contact with supervisor when problem arises or when requiring assistance."). The resulting 94 items of the Standards Survey were grouped into the same 13 skill clusters as the original ESSI items.

The Standards Survey was specifically designed to be completed by employers only after completion of the ESSI. The general instructions printed on the Standards Survey were as follows:

> "The purpose of this survey is to obtain information on employers' tolerance for selected work behaviours and employee characteristics that are commonly seen as having a negative relationship to employment survival. This survey is to be completed as a follow-up to the Employment Survival Skills Inventory. Please answer all questions carefully and completely. Your responses will be held in strictest confidence."

Each questionnaire was to be completed specific to one of eight entry-level occupations. The occupation specified for each respondent was the same one that he or she had previously chosen in completing the ESSI in Study One. Respondents were reminded of which occupation they had selected in the prior survey by the following item included within the instructions printed on the Standards Survey:

> "As you may recall, on the Employment Survival Skills Inventory you chose to rate the importance of work skills to the occupation of: Kitchen Helper. Please answer all of the following questions with respect to **this occupation ONLY** and return the completed survey in the postage-paid envelope provided."

The blank was filled in by the researcher with the occupation that the respondent had previously selected in Study One.

These general instructions were followed by a number of questions designed to elicit detailed information with respect to: (1) the employer's formal policy on employee probationary periods; (2) the average amount of time required for a new employee to fully train for the designated occupation; (3) the average tenure of employees in the designated occupation; and (4) the five work skills believed to be essential for success in the designated occupation as well as the five most common reasons for involuntarily terminating the employment of workers in the designated occupation (see Appendix F).

Once employers had responded to these preliminary items they were asked to continue with the primary rating task. Each of the 94 skill deficit statements of the Standards Survey was to be rated on three dimensions. The instructions for the rating task were as follows:

> "On the pages that follow you will find listed 94 work skill or employee character deficits that may lead to job failure and employee termination. For the occupation of: Kitchen Helper during the period allowed for new employees to come up to standard (see your response to question #2 above), please rate each item on the following three dimensions:
>
> 1. The number of violations permissible before you would terminate the employee. (if the item is not relevant to the job, mark NA in the box to its right.)
> 2. The frequency with which such a violation GENERALLY occurs with new employees during this start-up period.
> 3. How serious you PERSONALLY would view such a violation."

Data Analysis and Recoding Procedures

All data analyses were carried out using the various descriptive and comparative statistical procedures available in the SPSS$_X$™ computer software package (release 2.2) (see Nie, Hull, Jenkins, Steinbrenner, & Bent, 1983; SPSS$_X$ Inc., 1986). This software was run on the University of Alberta Michigan Terminal System (MTS) operating an Amdahl 5870 mainframe computer. SPSS$_X$ procedures "Frequencies", "Condescriptive", "Crosstabs", "Oneway", and "Reliability" were employed to carry out item response analyses, descriptive analyses of respondent demographic data, as well as to examine relationships between demographic variables and to compare respondent group means on demographic variables. The main analyses on the three skill deficit ratings were carried out using the "MANOVA", "Oneway", and "t-Test" procedures.

As was done in the analysis of Study One data, the 94 individual skill deficit items of the Standards Survey were grouped into 13 skill clusters, each comprised of items appearing to tap a similar dimension of work-related behaviour. These clusters were identical to those derived for the earlier study. The main analyses of employer ratings data with respect to the number of skill deficit occurrences permissible prior to employee termination, the frequency of skill deficit occurrences in new employees, and the perceived severity of skill deficit occurrences in new employees were carried out at the level of skill clusters rather than at the level of individual skill deficit items. Primary data analyses were carried out using a sequential analysis procedure recommended by Timm (1975). This procedure combines the Least Significant Difference (LSD) procedure for interpreting group differences (see Cramer & Bock, 1966) with the Bonferroni method for providing protection from increased Type I error on multiple univariate tests (see Harris, 1975).

To evaluate the possibility of significant differences between skill cluster means the analysis proceeded as follows. First, a Hotelling's multivariate *t*-test was carried out to test the assumption of equality of the multivariate means. Second, a significant T^2 statistic was followed up by a series of univariate dependent samples two-tailed *t*-tests comparing skill cluster means collapsed over occupations. To protect these univariate tests from inflated Type I error, the critical *t*-value for the tests was adjusted using the Bonferroni procedure in which the nominal alpha is divided by the number of contrasts (α/g) (Harris, 1975, pp. 103-105).

To evaluate the possibility of significant differences between occupations with respect to skill cluster importance ratings the analysis proceeded as follows. First, a MANOVA was carried out to test the hypothesis of no differences in skill cluster mean centroids as a function of occupation. The analysis design was fully factorial with eight non-empty cells. The Pillai-Bartlett Trace (ν) was selected as the test statistic for the MANOVA because it is considered to be the most powerful and robust test statistic in situations where the data show the diffuse structure and heterogeneity of variance common to research in the behavioural sciences (Olson, 1976).

Second, all significant multivariate main effects were examined further by means of one-way univariate F-tests on each of the 13 criterion variables. Experiment-wise Type I error for these univariate tests was controlled by means of the Bonferroni procedure in which the nominal alpha is divided by the number of variates in the study (α/p). Each individual F-ratio is then compared to the critical F-value for this adjusted alpha (Bray & Maxwell, 1982). Significant univariate main effects were followed by post hoc Scheffé contrasts.

Recoding of Question #4 Responses

As part of the Standards Survey, in question number 4a, employers were asked to "List the five work skills or employee characteristics that you believe are essential to success in this job." Similarly, in question number 4b, employers were asked to "List the five most common reasons for terminating employees in this job." The various responses given by employers to these two questions were classified into social and nonsocial competence categories according to a framework developed by Greenspan and Shoultz (1981). Each skill or reason for termination was sorted into one of six categories labelled: "temperament", "character", "social awareness", "production", "health", and "economy". More specifically, the temperament category included any employer statements describing the affective quality of workers' behaviour on the job, the character category included statements describing the moral quality of workers' behaviour on the job, and the awareness category included statements describing workers' understanding of social cues, rules, and norms of coworkers, supervisors or customers in the workplace. These first three categories are related to problems in the realm of interpersonal competence and, therefore, may be broadly referred to as "social" competence categories. The second group of three categories reflect problems in other domains of personal competence, personal health and physical fitness, or in the economic climate of employment. In this second group, the production category included any statements describing the quality and quantity of work performance or output, the health category included statements describing aspects of workers' physical capabilities (e.g., muscle strength, fine motor dexterity, etc.) required for job performance as well as changes in workers' physical condition that might make continued work impossible, and the economy category included statements describing economic factors that might lead to hiring or terminating employees. More detailed descriptions of these categories are provided by Greenspan and Shoultz (1981) as well as by Martin et al. (1986).

All the skills listed by employers as being essential for job success were initially typed on index cards and were then sorted into the six competence categories by three raters independently. The raters initially agreed on the categorization of 319 out of 390 listed skills (81.5%). Disagreements were resolved by obtaining group consensus on the categorization of the remaining 71 listed skill statements. In a similar fashion, employers' reasons for job termination were also individually typed on index cards and sorted into the six competence categories by the same three raters independently. The three raters initially agreed on the categorization of 334 out of 385 reasons (86.7%). As with the responses to question #4a, disagreements were resolved by obtaining group consensus on the remaining 51 reasons.

IX. RESULTS

A. SURVEY RESPONDENTS

Of the 106 survey packages mailed out to employers, 77 completed questionnaires were returned. This return represents 51% of the original sample pool of 151 employers and 72.6% of the 106 employers who actually agreed to complete the survey. Table 14 compares the industry sector distribution of the employers who completed and returned the Standards Survey to the industry sector distribution of those employers who initially received questionnaires.

TABLE 14.

Breakdown by Industry Sector
Employers Who Agreed to Accept Standards Survey
Versus Those Who Returned Survey

	Agreed (*N* = 106)		Returned (*N* = 77)	
Industry Sector	*n*	% of *N*	*n*	% of *N*
Agriculture/Forestry/Fishing	2	1.9	1	1.3
Mining/Quarrying/Oil	3	2.8	1	1.3
Construction & Trades Contracting	9	8.5	6	7.8
Manufacturing/Packaging/Chemicals	10	9.4	4	5.2
Transportation/Communications/Utilities/Sanitation	6	5.7	3	3.9
Wholesale & Retail Trade	24	22.6	19	24.7
Financial/Insurance/Real Estate	11	10.4	8	10.4
Community, Business & Personal Services	35	33.1	30	38.9
Public Administration	7	6.6	5	6.5

A chi-square analysis of the observed industry distribution of the 77 employers who returned completed questionnaires versus their expected distribution (based on the distribution of the 106 employers who were mailed questionnaires) revealed no significant bias (χ^2 [*df* 8, *n* = 77] = 3.67, *p* = 0.89).

Similarly, a chi-square analysis of the observed industry distribution of the 77 respondents versus the expected distribution (based on the industry distribution of the 241 respondents in Study One) also revealed no significant bias ($\chi 2$ [*df* 8, *n* = 77] = 8.79, *p* = 0.36). These results suggest that the employers who actually responded to the Standards Survey were representative of the 241 employers who completed the ESSI in Study One as well as the 106 employers who initially agreed to complete the Standards Survey.

The employers who completed the Standards Survey were most often male (72.7%) business owners, chief executives, or upper-level managers (72.8%) who directly supervised workers (77.9%) and had many years of experience in their respective positions (M = 7.7 yrs; *SD* = 7.1). The mean age of these respondents was 41.1 years (*SD* = 10.6 yrs.) and the majority (72.8%) indicated that they had graduated from either community college or university. The average profile of these 77 employers was almost identical to the average profile of the 241 employers who responded to the ESSI in Study One (refer to pp. 81-83).

The number of Standards Survey returns by occupation were as follows: Kitchen (16), Laundry (8), Handler (14), Assembly (4), Office (13), Cleaner (10), Fastfood (6), and Construction (6). A chi-square analysis comparing the observed distribution of occupations in the present sample to the expected distribution (based on the distribution of occupations selected by the Study One respondents) revealed no significant bias (χ^2 [*df* 7, *n* = 77] = 4.71, *p* = 0.69).

B. EMPLOYMENT SURVIVAL SKILLS STANDARDS SURVEY DATA

Prior to giving their opinions on the 94 work-related skill deficits that were of primary interest to the researcher in the present study, employers completing the Standards Survey were asked to respond to a number of secondary questions designed to elicit data on such things as: (1) company policies with respect to new employee probation and average number of employees passing probation, (2) the time required to fully train new employees to the employer's standards, and (3) the average job tenure in the entry-level occupations surveyed. Employers were also asked to list the five work skills or employee characteristics they believed to be most essential to job success as well as the five most common reasons for terminating employees in the specific occupation each selected. The results of analyses of the data aquired from these questions are reported in the following sections.

TABLE 15.

Probation Period, Time to Train to Standard, and Job Tenure by Occupation

	Formal Probation (in weeks)		Train to Standard (in weeks)		Job Tenure (in months)	
Occupation	M	*SD*	M	*SD*	M	*SD*
Kitchen	11.5	7.1	8.3	3.7	25.7	13.7
Laundry	11.7	7.3	10.5	7.0	24.0	9.8
Materials	13.1	12.5	14.2	8.8	31.1	18.1
Assembly	12.0	2.0	11.0	2.0	30.0	15.5
Office	12.1	1.7	16.6	12.7	21.7	12.0
Cleaner	16.0	7.6	16.6	16.0	26.7	17.0
Fastfood	10.0	4.0	8.7	3.0	10.5	7.0
Construction	10.0	1.0	3.0	1.7	5.8	2.2
GRAND MEANS	12.4	7.7	11.8	9.6	23.4	15.1

Table 15 summarizes the data obtained from employers with respect to the length of formal probation for new employees, the time required to train new employees to employers' standards, and average length of job tenure. These data are summarized for all eight entry-level occupations combined as well as for each occupation individually.

New Employee Probation Period

A common practice among employers is to place new employees on formal probation for some period of time after initial hiring. Generally 12 to 24 weeks long, employee probation is a specified period of time during which the new employee may be evaluated on the job with only a minimal commitment on the employer's part to the continued employment of the employee. During probation the new employee is often paid at a reduced rate and is commonly not enroled in any company benefits programs. As well, the employer usually monitors the new employee's performance more frequently and intensely during the probation period and reserves the right to terminate the new employee for cause without notice or severance pay during this time.

In the Standards Survey employers were asked to specify whether or not their company had a policy of placing new employees on formal probation and, if so, for how many weeks. Sixty-four (83.1%) of the 77 employers who responded to the Standards Survey reported that their firm did indeed have a formal probation period for new employees. There was a significant difference in the occupational distribution of employers who reported having a probation policy versus those who did not (χ^2 [*df* 14, *n* = 64] = 24.87, $p < 0.01$), with the employers of workers in Construction reporting no probation policy significantly more often than expected. Across the eight entry-level occupations surveyed, reported probationary periods ranged from a rather short two weeks to a lengthy 52 weeks, with a mean of 12.4 weeks (*SD* = 7.7 wks.; 95% C.I. = 10.0 to 14.7 wks.) and a median of 10 weeks (see Table 15, p. 134).

Apparent differences among the eight occupations with respect to the mean length of employee probation may be most clearly seen in Figure 7, which plots the means and associated univariate 95% confidence intervals of the probation periods for each occupation. This figure also plots the grand mean over combined occupations and the 95% confidence bounds for the grand mean (dashed lines). Occupations are plotted from left to right in order of decreasing mean length of probation.

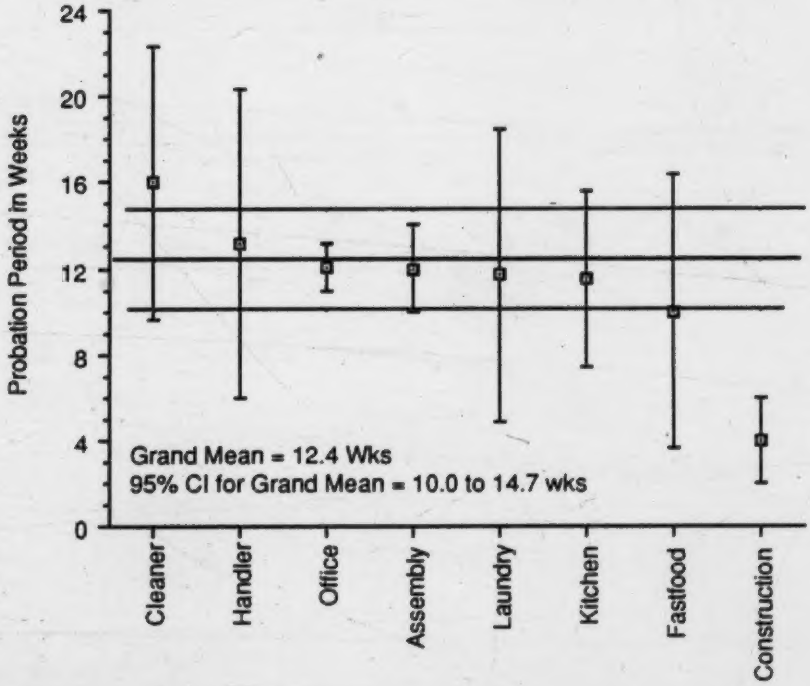

FIGURE 7. Mean number of weeks and associated univariate 95% confidence intervals for new employee probation period as a function of occupation.

Although the mean length of probation periods reported for the different occupations as plotted in Figure 7 appear to differ quite a bit, a one-way ANOVA on length of employee probation by occupation failed to reveal a significant main effect for occupation on the mean length of probation periods ($F_{(7/56)} = 0.51$, $p = 0.83$). This lack of a significant univariate main effect for occupation was likely the result of the great variation in the length of probation periods reported by employers both within and between occupations.

With respect to the successful completion of the probation period, the majority (84.4%) of those employers who reported that their firm had a policy of placing new employees on probation also reported that more than 90% of their new employees successfully complete the probation period. The remainder of the employers who reported having a probation policy indicated that from 10 to 30% of their new employees regularly fail to successfully complete their probation. There was no significant difference in the occupational distribution of employers with a high probation success rate versus those with a low probation success rate (χ^2 [df 14, $n = 64$] = 13.64, $p = 0.48$).

New Employee Training Period

Separate from any formal probation policy that a company may have in place, employers generally allow some amount of time for new employees to learn the specific tasks of their job, adjust to the workplace, and fully come up to the production standards and expectations for the specific job they were hired into. During this period of "training to standard" the employer will often be more tolerant of employee mistakes and below-standard job performance, particularly if the new employee shows a good attitude and appears to be trying to do a good job. Dependent on job complexity and various other factors in the workplace, this period of training new employees to the employer's standard may vary significantly in length from the company's formal probation period. In the case of low-skill entry-level jobs it might be reasonable to assume that many employers would expect their new employees to fully attain the production standards of the job well before the formal probation period actually comes to an end.

As part of Study Two, the employers who completed the Standards Survey were asked to specify the number of weeks that they generally allowed for new employees to fully come up to the production standards and work expectations of the entry-level occupations they had selected for the survey. The length of the training "to standard" period reported by employers ranged from 1 to 48 weeks with a mean of 11.8 weeks (*SD* = 9.6 wks.; 95% C.I. = 7.8 to 15.7 wks.) and a median of 10 weeks (see Table 15, p. 134). These data suggest that there is a rather close match between the average length of probation periods in entry-level occupations and the actual amount of time required to train new employees to the employers' standards.

The pattern of apparent differences between occupations with respect to the mean length of the training to standard period may be most readily seen in Figure 8 (following page). This figure plots training period means and associated univariate 95% confidence intervals for each occupation as well as the grand mean over occupations and the 95% confidence bounds for the grand mean (dashed lines). Occupations are plotted from left to right in order of decreasing mean training time.

An ANOVA testing the main effect of the occupation factor on the variable of mean time to "train to standard" revealed a significant main effect for occupation ($F_{(7/68)} = 2.30$, $p < .05$). Post-hoc multiple comparisons utilizing Tukey's test statistic ($\alpha = .05$) revealed the mean length of training time reported for Construction (3 wks) to be significantly less than that reported for any other occupation. No other occupations differed significantly from each other with respect to the mean length of time required to train new employees to standard.

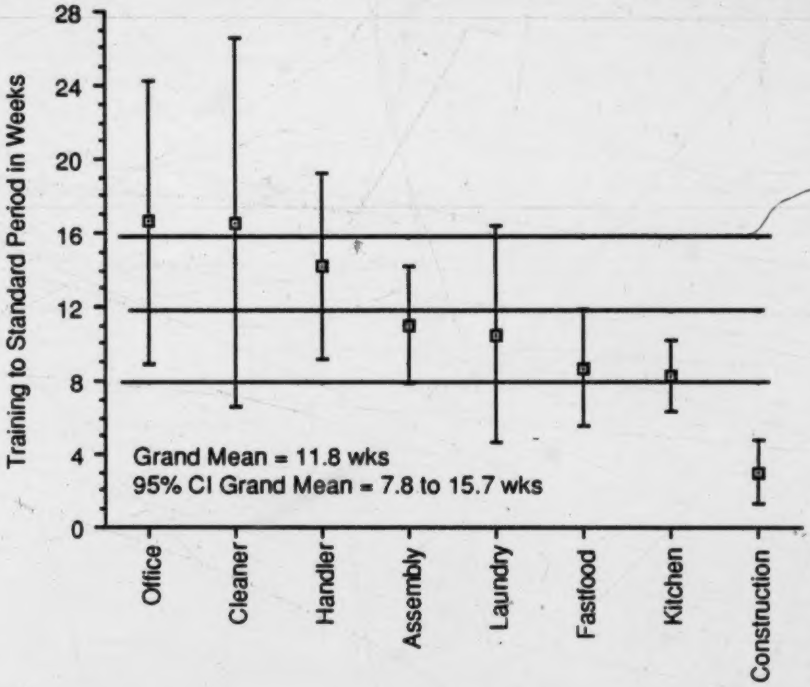

FIGURE 8. Mean number of weeks and associated univariate 95% confidence intervals for new employee "training to standard" period as a function of occupation.

Average Job Tenure

In the Standards Survey employers were asked to indicate the average number of months that employees remained in their jobs before leaving either through promotion, resignation, or involuntary termination. The average job tenure reported by individual employers ranged from a low of only 3 months to a high of

60 months (*SD* = 15.1 mos.; 95% C.I. = 16.4 to 30.5 mos.), with a mean tenure across all eight entry-level occupations of nearly two years (M̲ = 23.4 mos.) and a median tenure of 18 months (see Table 15, p. 134).

An ANOVA testing the main effect of the occupation factor on the variable of mean job tenure revealed a significant main effect for occupation ($F_{(7/68)} = 3.06$, $p < .05$). Post-hoc multiple comparisons utilizing Tukey's test statistic ($\alpha = .05$) revealed that the mean length of job tenure reported for Construction (5.8 mos) was significantly shorter than that of any other occupation except Fastfood (10.5 mos). Mean job tenure for Construction did not differ significantly from mean job tenure in Fastfood. Job tenure in Fastfood, on the other hand, differed significantly only from job tenure in the occupation of Handler (31.1 mos).

Differences between the various occupations targeted in the survey with respect to mean length of job tenure may be most clearly seen in Figure 9 (following page). This figure presents a plot of job tenure means and associated univariate 95% confidence intervals for each occupation as well as the grand mean over occupations and the 95% confidence bounds for the grand mean (dashed lines). Occupations are plotted from left to right in order of decreasing mean job tenure.

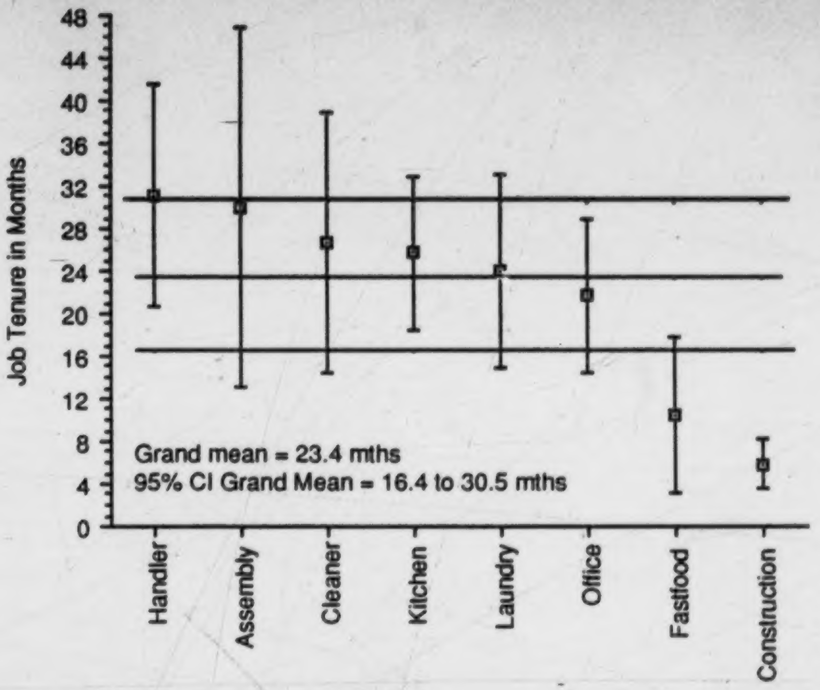

FIGURE 9. Mean number of months and associated univariate 95% confidence intervals for employee job tenure as a function of occupation.

Essential Work Skills and Employee Characteristics

Question #4(a) on the first page of the Standards Survey asked employers to: "List 5 work skills or employee characteristics that you believe are essential to success in this job". The 77 employers who responded to the survey generated 390 statements describing skills and employee characteristics which they viewed as being essential for job success in the eight entry-level occupations targeted by the study. (A few respondents gave more than the required five responses and some gave fewer.) The listed skills and characteristics were classified into three social (temperament, character, social awareness) and two nonsocial (production, health) competence categories according to the framework originally developed by Greenspan and Shoultz (1981). The third nonsocial competence category—"economy"— was not used because no employers listed items that would fit this category[1]. The method used to classify employers' responses into competence categories is fully described on pages 130-131.

TABLE 16.

Classification of Essential Job Skills by Competence Category and Occupation

	Kitchen (*n* = 16)	Laundry (*n* = 8)	Office (*n* = 13)	Fastfood (*n* = 6)	Handler (*n* = 14)	Assembly (*n* = 4)	Cleaner (*n* = 10)	Construct (*n* = 6)	TOTAL (*n* = 77)
Temperament	2	1	3	2	2	2	1	1	14
Character	20	10	20	11	19	5	14	9	108
Awareness	26	12	24	13	16	4	11	9	115
TOTAL SOCIAL:	48	23	47	26	37	11	26	19	237
Production	24	15	21	4	25	8	20	11	128
Health	8	3	0	1	5	1	2	5	25
TOTAL NSOCIAL:	32	18	21	5	30	9	22	16	153
GRAND TOTALS:	80	41	68	31	67	20	48	35	390

Table 16 presents the distribution of employer statements by competence categories and occupation. The table rows present the frequency of employers' responses classified by competence category, while table columns present the frequency of employers' responses categorized by occupation. The last column and row of Table 16 show the marginal totals for the tabled frequencies. Overall, employee skills and characteristics in the production category were most often cited as being essential for job success (*n* = 128) (32.8%), followed closely by competencies in the social awareness ($n = 115$) (29.5%) and character ($n = 108$) (27.7%) categories respectively. In contrast, competencies classified into the temperament and health categories were cited quite infrequently (approximately 4% to 6%).

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[1] The original Greenspan categories were devised to classify reasons for employee dismissal and, therefore, included one category that would capture economic lay-offs. This "economy" category is the only one of the six that cannot be used to classify essential work skills or employee characteristics because it is focussed on factors external to the worker.

A chi-square analysis comparing the distribution of total responses across all five competency categories (collapsed over occupation) against the expected values for each of the five cells indicated that the distribution was probably not due to chance (χ^2 [*df* 4, $n = 390$] = 151.7, $p < .001$)[1] and suggested a significant main effect for the competence factor. That is, employers' responses were not equally distributed over the five competence categories and at least one of the five categories was cited significantly more or less often than the other four. A similar analysis comparing the distribution of total responses across all eight occupations (collapsed over competence categories) against expected values for each of the eight cells failed to attain statistical significance (χ^2 [*df* 7, $n = 390$] = 1.19, $p > .001$). Of course, this latter result was to be expected since employers were specifically asked to list only five skills and generally did so.

To determine whether employers generally listed more skills and characteristics than would be expected by chance in either the social competence categories or the nonsocial categories, the observed distribution of total responses classified as social (237) versus those classified as nonsocial (153) was tested against the distribution that would be expected solely by chance (231 vs 154, respectively). A nonsignificant chi-square statistic (χ^2 [*df* 1, $n = 390$] = 0.96, $p > .001$) indicated that employers listed neither more social nor more nonsocial skills than expected. However, close inspection of Table 16 suggests that some of the five competence categories were individually cited more often than would be expected by chance.

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[1] The alpha level for each of the chi-square analyses carried out in this section was set equal to .001 to achieve an acceptable experiment-wise alpha level (see Kirk, 1982, pp. 103-105).

Of the 237 social competencies cited as essential to job success, those skills and characteristics classified as related to social awareness were listed significantly more often than expected by employers across all eight entry-level occupations (χ^2 [*df* 7, $n = 115$] = 25.41, $p < .001$). In contrast, skills and characteristics related to temperament were cited significantly less often as being essential to employment success across occupations (χ^2 [*df* 7, $n = 14$] = 53.24, $p < .001$). Essential job skills classified as being related to character were cited no more or less often than expected (χ^2 [*df* 7, $n = 108$] = 13.24, $p > .001$). Among the 153 nonsocial skills and employee characteristics listed by employers as essential to job success, those related to production were cited more frequently than expected across occupations (χ^2 [*df* 7, $n = 128$] = 41.7, $p < .001$), whereas those related to the health category were listed significantly less often than expected across occupations (χ^2 [*df* 7, $n = 25$] = 39.63, $p < .001$). In summary, employee skills and characteristics related to the production and social awareness competence categories were cited as essential to job success significantly more often than expected across the eight entry-level occupations, whereas employee skills and characteristics related to the temperament, and health categories were cited less often than expected.

Although the results to this point clearly point out that certain types of employee skills and characteristics are more important than others, regardless of the type of entry-level occupation engaged in, a close look at Table 16 also suggests that there may be some significant variation in the relative importance of the five competence categories both within and across the different occupations. However, while the raw frequency data presented in Table 16 (p. 142) permits easy comparison between competence categories within individual occupations, it does not readily permit comparison between occupations on the relative importance of individual competence categories because both the number of responses classified into each competence category and the number of employers who gave responses differs from one occupation to another. Patterns of difference in the relative dominance of one competence category over others within given occupations and between occupations may be more readily seen by first transforming the raw frequency data presented in Table 16 into relative proportions based on the number of respondents in each of the eight occupations. This was done to produce Figure 10 (following page), which plots percent of the total number of responses given by employers in each occupation as a function of the five competence categories.

A careful examination of Figure 10 reveals that different occupations do appear to require different mixtures of employee skills and characteristics for success. The employers' lists of essential job skills suggest that the relative mix of competencies required for success in one occupation will not necessarily result in equal success in another occupation. For example, Figure 10 shows that the Fastfood, Office and Kitchen occupations require more skill in the social awareness category than do the Handler and Assembly occupations. On the other hand, these latter two occupations together with Laundry and Cleaner would appear to require a greater number of production-related skills and characteristics. The categories of character and temperament would appear to be relatively consistent across all eight entry-level occupations.

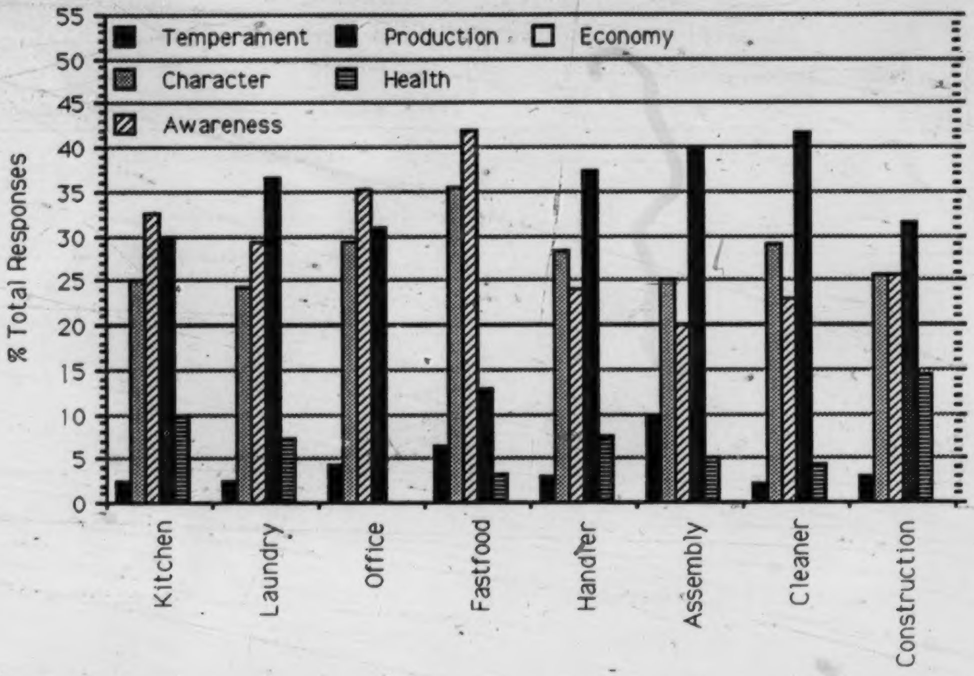

FIGURE 10. "Essential job skills" data. Bar chart showing percent of total responses in each competence category by occupation.

Reasons For Job Termination

Question #4(b) on page one of the Standards Survey asked employers to: "List the 5 most common reasons for terminating employees in this job". The 77 employers who responded to the survey generated 385 reasons for "commonly" terminating employees in the eight entry-level occupations that were targeted by the study. As was done with the data for essential job skills, the reasons given by employers for terminating employees were classified into three social and three nonsocial competence categories according to a framework developed by Greenspan and Shoultz (1981) (see pp. 130-131).

TABLE 17.

Classification of Reasons for Employee Termination by Competence Category and Occupation

	Kitchen (*n* = 16)	Laundry (*n* = 8)	Office (*n* = 13)	Fastfood (*n* = 6)	Handler (*n* = 14)	Assembly (*n* = 4)	Cleaner (*n* = 10)	Construct (*n* = 6)	TOTAL (*n* = 77)
Temperament	4	4	6	4	3	2	6	2	31
Character	25	11	24	10	25	1	14	10	120
Awareness	24	5	17	10	13	5	9	6	89
TOTAL SOCIAL:	53	20	47	24	41	8	29	18	240
Production	12	7	9	5	15	9	12	7	76
Health	7	7	1	4	7	0	2	4	32
Economy	6	5	2	2	7	4	6	5	37
TOTAL NSOCIAL:	25	19	12	11	29	13	20	16	145
GRAND TOTALS:	78	39	59	35	70	21	49	34	385

Table 17 presents the distribution of job termination reasons by the six competence categories and eight occupations. As may be seen, employers cited more 'social' reasons for terminating employees (n = 240) (62%) than nonsocial reasons (n = 145) (38%). More specifically, the most frequently cited reasons for job termination fell within the categories of character (*n* = 120) (31.2%), social awareness (*n* = 89) (23.1%), and production (*n* = 76) (19.7%). The social category of temperament and the two nonsocial categories of health and economy were cited about equally often (8-9%).

A chi-square analysis of the distribution of total responses across all six competence categories (collapsed over occupation) against the expected values for each of the six cells indicated that the distribution was probably not due to chance (χ^2 [*df* 5, *n* = 385] = 105.15, $p < .001$)[1] and suggested a significant main effect for the competence factor. A similar chi-square analysis of the distribution of total responses across all eight occupations (collapsed over competence categories) against expected values for each of the eight cells did not attain statistical significance (χ^2 [*df* 7, $n = 385$] = 2.07, $p > .001$).

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[1] The alpha level for each of the chi-square analyses described in this section was set equal to .001 to achieve an acceptable experiment-wise alpha level (see Kirk, 1982, pp. 103-105).

To determine whether employers terminated employees more often for social reasons as opposed to nonsocial reasons, the observed distribution of total responses classified as social (240) versus those classified as nonsocial (145) was tested against the distribution expected by chance (231 and 154, respectively). A significant chi-square statistic (χ^2 [*df* 1, $n = 385$] = 23.44, $p < .001$) indicated that the distribution was probably not due to chance and that employers in the surveyed entry-level occupations were more likely to terminate employees for deficits in the social competency realm. Nearly 65% of the reasons given for firing employees were classified as related to social competence.

To further elucidate the relationships between the three social competence categories as well as between the three nonsocial competence categories, a series of chi-square analyses were carried out. Of the 240 social reasons for employee termination generated by this sample of employers, 120 were classified as character, 89 as social awareness, and 31 as temperament related. A chi-square analysis indicated a statistically significant effect when the expected distribution of social reasons was tested against the obtained outcome (χ^2 [*df* 7, $n = 240$] = 57.13, $p < .001$). However, when the distributions of responses for each of the three social competence categories were individually tested against each other, no significant comparisons were found. A similar set of analyses was also carried out for the nonsocial competence categories, with similar results. Of the 145 nonsocial reasons generated, 76 were classified as production. 37 as economy, and 32 as health related. The obtained distribution of nonsocial reasons for job termination differed significantly from the expected distribution

(χ^2 [*df* 7, $n = 145$] = 30.13, $p < .001$) but no significant comparisons were found between the distributions of the three individual nonsocial competence categories.

To test the hypothesis of no differences in reasons for employee termination as a function of occupation, the expected distribution of responses for each of the eight occupations over the six competence categories was tested against the observed distribution. The observed distribution of only three occupations differed significantly from expected values; these were: Kitchen (χ^2 [*df* 5, $n = 78$] = 32.15, $p < .001$), Handler (χ^2 [*df* 5, $n = 70$] = 26.51, $p < .001$), and Office (χ^2 [*df* 5, $n = 59$] = 37.93, $p < .001$). The Assembly occupation approached but did not attain the stringent experiment-wise alpha criterion. To determine whether the observed differences from expected values were related more to social or nonsocial competency categories, the expected distribution of social reasons and nonsocial reasons for the three combined occupations was tested against the observed distribution. For the three occupations concerned, employers cited 141 social reasons versus 66 nonsocial reasons for terminating employees. A significant chi-square statistic, (χ^2 [*df* 1, $n = 207$] = 27.17, $p < .001$), suggests that socially related reasons for employee termination are more prevalent for these three occupations. Although not attaining significance at the .001 level, a glance at Table 17 (p. 147) reveals that Assembly was the only occupation for which more nonsocial than social reasons were cited by employers.

Figure 11 shows a bar chart that plots the percent of the total number of responses given by employers in each occupation as a function of the six competence categories. Close examination reveals that the most common category of job termination reasons varies from one type of occupation to another. For example, in the majority of the entry-level occupations surveyed, employers appear to most often terminate employees for reasons related to character, whereas, for the Assembly occupation, the most commonly cited reasons for involuntary termination were production-related. Deficits in social awareness were also quite commonly cited as reasons for employee termination in all eight occupations whereas temperament and health related reasons were cited relatively infrequently in all occupations.

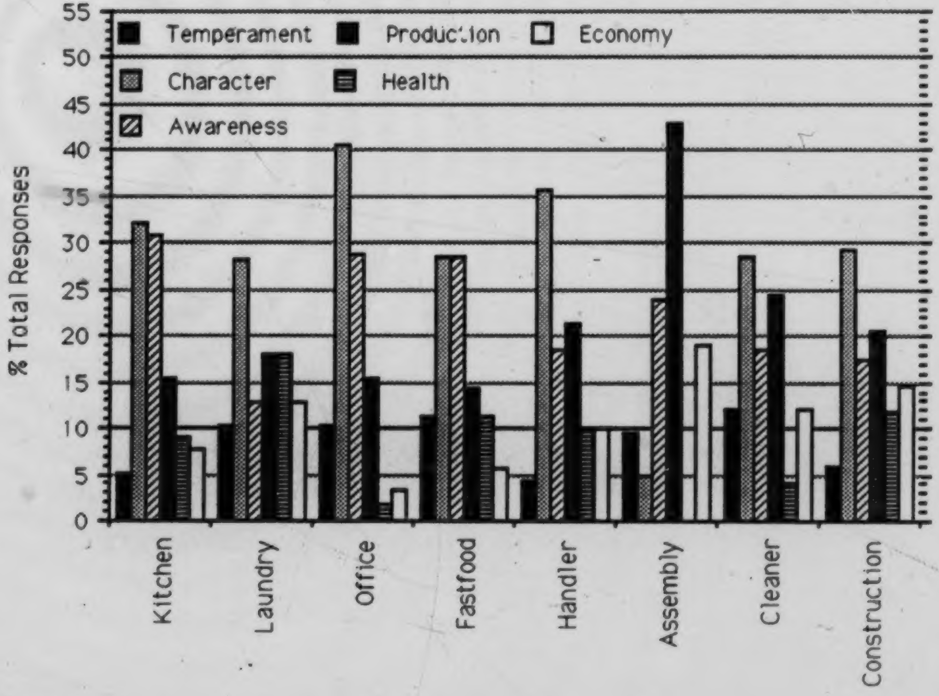

FIGURE 11. "Job termination" data. Bar chart showing percent of total responses in each competence category by occupation.

Essential Job Skills Versus Reasons for Job Termination

Comparing the data on what types of skills employers viewed as essential to job success versus the types of reasons they gave for terminating employees is rather enlightening. A chi-square analysis comparing the distribution of essential job skills as classified into the six 'Greenspan' competence categories to the distribution of termination reasons by competence categories revealed the two distributions to be very different (χ^2 [$df = 5$, $n = 775$] = 61.45, $p < .001$). Employers listed significantly more items in the production and social awareness categories as essential job skills, whereas they listed significantly more items classified into the character, temperament and economic categories as reasons for firing workers. From these data, it would appear that skills related to production and social awareness will get a worker hired but that it is employee failings related to the character and temperament dimensions, along with negative changes in the economics of the job itself, that will most commonly lead to an employee's involuntary termination.

The discrepency between hiring and firing criteria remained even when the economic category was deleted from analysis and the two sets of data were compared only with respect to the five categories that may be considered largely under a worker's control (χ^2 [$df = 4$, $n = 738$] = 22.16, $p = .0002$).

Comparisons to Study One Importance Ratings Data

The lists of essential job skills and reasons for job termination generated by employers in the present study cannot be directly compared to the data on important job survival skills that was collected in Study One because of differences in the manner in which skills were categorized. Although each of the individual skill items included within the ESSI in Study One can be uniquely classified according to Greenspan's system, the 13 derived skill clusters cannot be so easily assigned to a unique competence category because some of them include a mixture of items which fit into more than one of Greenspan's six categories. Nevertheless, eight of the skill clusters can be classified with reasonable precision into a unique competence category and these may be used to broadly compare and partially cross-validate the results of these two approaches to answering the question of what skills are related to job survival in entry-level occupations. These eight skill clusters of the ESSI may be roughly categorized according to Greenspan's system as follows (mean importance ratings for clusters are given in parentheses):

> TEMPERAMENT– "Emotional & Behavioural Self-Control" (3.84) and "Affective Response to Supervision or Criticism" (3.71).
>
> CHARACTER– "Attendance & Punctuality" (4.16) and "Dependability, Reliability & Ability to Work Unsupervised" (4.08).
>
> AWARENESS– "Work-Related Interpersonal & Social Skills" (3.67) and "Work Attitude, Work Ethic & Commitment to Work" (3.86).
>
> PRODUCTION– "Production Efficiency, Quantity, Quality & Consistency" (3.80) and "Ability to Follow Instructions, Rules & Schedules" (3.85).
>
> HEALTH– None of the 13 skill clusters predominantly contains items that uniquely fit this competence category.
>
> ECONOMY– None of the 13 skill clusters predominantly contains items that uniquely fit this competence category.

Based on the above recategorization of eight skill clusters, it appears that the employers who responded to Study One generally view skills related to character as most important to job survival, followed closely by skills related to the production category. The temperament and social awareness categories were seen as relatively less important than the other two. This pattern is not inconsistent with the data from the present study. It appears that the dimension of "importance" taps not only those skills that are essential to success in the job (production), but also the reasons why most entry-level workers lose jobs (character).

C. SKILL DEFICIT RATINGS DATA

As discussed on page 124, the primary purpose of the Standards Survey was to extend previous research by obtaining data from employers with respect to employee deficits in those skill areas that were initially examined in Study One. The Standards Survey was used to present employers with 94 statements describing employee deficits in work-related skills, behaviours or character that could lead to job failure and termination. These skill deficit statements mirrored the 13 skill clusters that were initially rated for their importance to employment survival in Study One. In the present study, employers were asked to rate each of the 94 skill deficits with respect to three dimensions: (1) The number of skill deficit occurrences permissible before a new employee would be involuntarily terminated from employment, (2) the frequency with which each skill deficit occurs in new employees, and (3) the perceived severity of each skill deficit. The results of these employer ratings are presented in the following subsections.

Number of Skill Deficit Occurrences Permissible Prior to Employee Involuntary Termination

As part of the Standards Survey, employers were asked to record the number of times that a new employee would be permitted to demonstrate occurrences of each of the 94 listed skill deficits during the "training to standard" period[1] before the employee would be terminated from employment. It was anticipated that these data would give some indication of employers' relative tolerance for specific skill deficits or employee failings within the different entry-level occupations during the initial employee training period. Skill clusters that obtained relatively low mean occurrence counts would be likely to include specific skills or employee characteristics that when absent or in deficit would quickly lead to involuntarily termination from employment. That is, skill clusters with a low mean number of permissible occurrences would define those skill areas in which employers have less tolerance for employee mistakes or incompetence.

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[1] The "training to standard" period was specified by each employer individually in question #2 on the first page of the Standards Survey form (see Appendix F).

Table 18 (next page) presents the means and standard deviations of the number of skill deficit occurrences permissible prior to employee termination for each of the 13 skill clusters taken over the eight entry-level occupations as a group, as well as the mean number of permissible skill deficit occurrences for each occupation individually. In this table skill clusters are listed from top to bottom in order of decreasing mean scores collapsed over occupations. Similarly, occupations are listed from left to right in order of decreasing mean scores collapsed over skill clusters. The first two data columns of the table present the means and standard deviations for each of the 13 skill clusters collapsed over occupations, whereas the remaining eight data columns present skill cluster means within individual occupations. The final two rows of the table present the means and and standard deviations for each of the eight occupations collapsed over skill clusters. The grand mean of the number of skill deficit occurrences permissible prior to employee termination, collapsed over both skill clusters and occupations, was a relatively low 2.44 occurrences, with a standard deviation of 0.70.

TABLE 18.

Number of Skill Deficit Occurrences Permissible Prior to Employee Termination

		Total(N = 77)		Occ5	Occ3	Occ7	Occ2	Occ1	Occ8	Occ4	Occ6
	Skill Clusters	Mean	*SD*	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
C5	Adaptability, Flexibility & Learning Proficiency	3.16	1.37	4.08	3.11	3.33	3.21	3.05	2.69	2.92	2.72
C11	Ability To Organize & Manage Information, Materials, Persons	2.92	1.05	3.33	2.79	3.16	2.88	3.00	3.08	1.87	2.70
C6	Production Efficiency, Quantity, Quality & Consistency	2.92	1.08	3.46	2.95	3.33	2.78	3.11	2.00	2.50	2.43
C9	Dependability, Reliability & Ability To Work Unsupervised	2.67	0.96	3.47	2.70	2.90	2.67	2.64	2.10	1.88	2.16
C12	Work Attitude, Work Ethic & Commitment To Work	2.65	0.96	3.51	2.58	2.43	2.76	2.54	2.18	2.16	2.33
C1	Appearance, Hygiene & Health	2.61	0.94	3.00	2.87	1.48	2.82	1.94	2.97	3.62	2.71
C10	Ability To Follow Instructions, Rules & Schedules	2.51	1.01	3.59	2.34	2.67	2.35	2.33	2.33	2.10	1.98
C4	Attendance & Punctuality	2.46	0.83	3.06	2.43	2.50	2.34	2.63	2.17	2.50	1.73
C7	Emotional & Behavioural Self-Control	2.35	0.90	2.81	2.66	2.13	2.34	2.21	2.00	2.25	1.90
C13	Work-Related Social & Interpersonal Skills	2.25	0.73	2.79	2.35	2.15	2.06	2.20	2.13	2.01	1.86
C8	Affective Response To Supervision & Criticism	2.08	0.91	2.90	2.13	2.21	2.16	1.95	1.68	1.56	1.48
C2	Safe Work Behaviour & Safety Awareness	1.91	0.72	2.04	1.84	2.97	2.13	1.76	1.63	1.44	1.65
C3	Basic Prevocational & Practical Skills.	1.20	0.83	0.99	1.60	0.89	1.38	1.02	1.33	1.56	1.06
All Skill Clusters:											
	Mean			3.00	2.49	2.47	2.45	2.34	2.17	2.13	2.05
	Standard Deviation			0.96	0.60	0.34	0.19	0.75	0.38	0.51	0.70

NOTE: Occ1 = Kitchen, Occ2 = Laundry, Occ3 = Handler, Occ4 = Assembly, Occ5 = Office, Occ6 =Cleaner, Occ7 = Fastfood, and Occ8 = Construction.

Nevertheless, a brief examination of Table 18 suggests that there may be real differences in employers' tolerance for new employees' deficits and failings as a function of both skill clusters and occupations. For example, the average number of permissible skill deficit occurrences for individual skill clusters collapsed over occupations (first column of Table 18) ranged from a high of 3.16 (*SD* = 1.37) for the "Adaptability" skill cluster to a low of 1.20 (*SD* = 0.83) for the "Prevocational" skill cluster. Based on this range of counts it would appear that employers generally show relatively high tolerance for employee deficits and failings in those skills and behaviours included within the "Adaptibility", "Organization", and "Production" clusters, and relatively little tolerance for employee incompetence with respect to the "Safety" and "Prevocational" skill clusters.

In a similar vein, the mean number of skill defict occurrences permissible prior to employee termination in individual occupations collapsed over skill clusters (last row of Table 18) ranged from a high of 3.00 (*SD* = 0.96) for the Office occupation to a low of 2.05 (*SD* = 0.70) for the Cleaner occupation. Such differences suggest that employers of workers in some occupations (e.g., Office) may be generally more tolerant of employee mistakes and incompetencies than in other occupations (e.g., Cleaner, Assembly, Construction).

Differences Between Skill Clusters

The assumption of the equality of multivariate means for the 13 skill clusters was evaluated using the Hotelling's multivariate *t* -test procedure. The resulting significant T^2 statistic ($T^2 = 298.30$, $F_{(12/65)} = 21.26$, $p < .05$) suggests that there were significant differences between some of the skill clusters in the mean number of skill deficit occurrences permissible prior to employee termination when all eight occupational groups were considered simultaneously. To determine which pairs of skill clusters actually differed, the multivariate *t* -test was followed by a series of univariate *t* -tests comparing variable means. Differences between skill clusters in the mean number of permissible skill deficit occurrences (collapsed over occupations) were compared by means of a series of dependent samples two-tailed *t*-tests. The Bonferroni procedure was used to adjust the critical value for Student's *t* such that the overall probability of finding a significant result was kept to an acceptable five percent. With alpha set at .001 and a resulting critical $t_{(76)}$ equal to 3.25 for each paired-comparison, it was found that the majority (70%) of all possible paired-comparisons between the 13 skill clusters resulted in statistically significant differences.

TABLE 19.

Results of Dependent t-Tests Comparing Skill Clusters on Mean Number of Skill Deficit Occurrences Permissible Prior to Employee Termination

Skill Clusters

Upper right diagonal presents *t* values. With *df* = 76, critical value for $t \geq 3.25$

	C5	C11	C6	C9	C12	C1	C10	C4	C7	C13	C8	C2	C3
C5		2.25	2.38	**4.37**	**5.63**	**3.64**	**6.55**	**4.91**	**7.26**	**9.26**	**10.13**	**8.10**	**11.67**
C11	0.24		0.09	2.43	**3.40**	2.50	**3.87**	**3.84**	**5.82**	**8.13**	**8.38**	**8.45**	**12.60**
C6	0.25	0.01		2.42	2.89	2.15	**3.99**	**3.96**	**5.76**	**8.11**	**9.08**	**7.98**	**11.42**
C9	**0.49**	0.25	0.24		0.31	0.48	1.86	2.16	**3.19**	**5.56**	**7.56**	**6.59**	**10.34**
C12	**0.51**	**0.28**	0.27	0.02		0.34	2.04	1.81	**3.86**	**6.71**	**8.24**	**6.22**	**10.98**
C1	**0.55**	0.31	0.31	0.06	0.04		0.73	1.22	2.39	**3.55**	**4.51**	**5.38**	**11.18**
C10	**0.65**	**0.41**	**0.40**	0.16	0.13	0.10		0.44	1.80	**3.71**	**6.00**	**4.79**	**9.26**
C4	**0.70**	**0.46**	**0.45**	0.21	0.18	0.15	0.05		1.09	2.45	**3.75**	**5.52**	**9.31**
C7	**0.82**	**0.58**	**0.57**	**0.32**	**0.30**	0.26	0.17	0.12		1.37	**3.73**	**3.61**	**9.43**
C13	**0.91**	**0.68**	**0.67**	**0.42**	**0.40**	**0.36**	**0.27**	0.22	0.10		2.79	**3.38**	**9.42**
C8	**1.08**	**0.84**	**0.83**	**0.59**	**0.57**	**0.53**	**0.43**	**0.38**	**0.27**	0.17		1.50	**6.97**
C2	**1.25**	**1.01**	**1.00**	**0.76**	**0.74**	**0.70**	**0.60**	**0.55**	**0.43**	**0.34**	0.17		**5.44**
C3	**1.96**	**1.72**	**1.71**	**1.47**	**1.44**	**1.41**	**1.31**	**1.26**	**1.14**	**1.04**	**0.88**	**0.71**	

Lower left diagonal presents differences between skill cluster means.

NOTE: Boldface indicates differences significant at the .001 level of two-tailed probability. Skill cluster names may be identified by referring to Table 18 on page 155.

Table 19 presents the results for the series of dependent samples *t*-tests on skill cluster means collapsed over occupations. The upper right diagonal of the table presents calculated values of Student's *t* for differences between skill clusters in the number of skill deficit occurrences permissible prior to termination, while the lower left diagonal of the table presents actual difference scores for skill cluster pairs. Due to the lack of available space in Table 19, the 13 skill clusters are listed by number rather than by name (e.g., C6 = Production, C13 = Social Skills, etc.) and the reader is asked to refer to Table 18 (p. 155) to identify clusters by name. Values printed in boldface are significant at the 0.001 level of confidence.

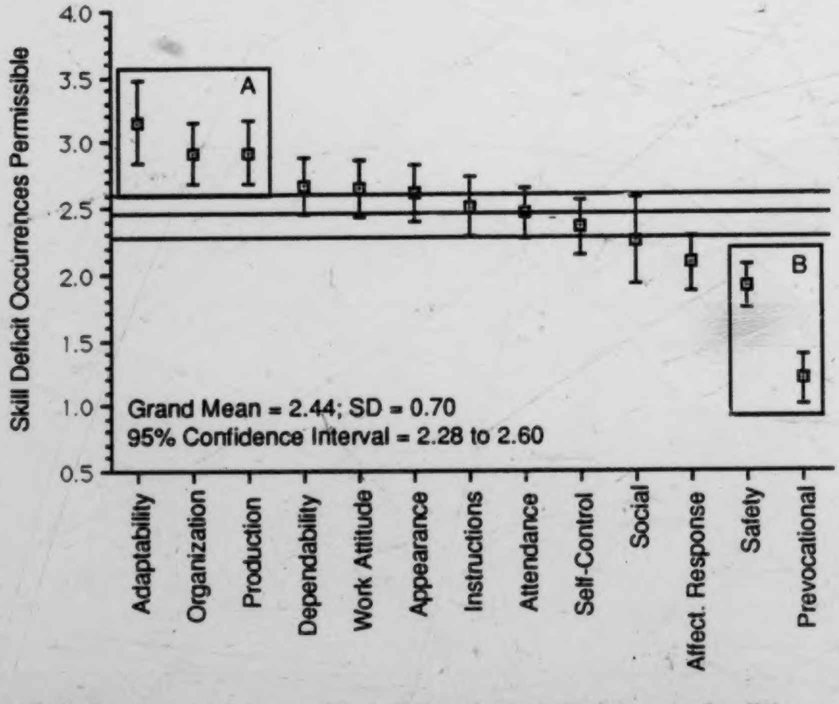

FIGURE 12. Mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for skill clusters collapsed over occupations.

Differences in overall employer tolerance for employee deficits in the various competencies included within skill clusters may be most readily seen in

Figure 12. This figure plots the mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for each of the 13 skill clusters collapsed over occupations, as well as the grand mean and associated upper and lower 95% confidence bounds for the skill clusters as a group (dashed lines). Individual skill cluster means are plotted in order of decreasing size, from left to right.

In Figure 12 the box labelled "A" highlights the three skill clusters for which employers showed the highest levels of tolerance with respect to employee skill deficits or failings; namely: "Adaptability", "Organization", and "Production". Similarly, the box labelled "B" highlights the two skill clusters for which employers generally showed the least amount of tolerance; namely: "Prevocational" and "Safety". These five clusters appear to be the only ones that differ substantially in employer tolerance from the grand mean of all skill clusters.

Differences Between Occupations

Differences in employers' tolerance for employee deficits in skill clusters as a function of occupations were examined utilizing a sequential analysis procedure in which a MANOVA on the 13 skill clusters by the eight occupations was followed by univariate tests on individual skill clusters by the eight occupations, which in turn, were followed by post hoc contrasts between individual occupations for individual skill clusters. Table 20 presents the results of the initial step in this sequential analysis. The MANOVA on skill clusters by occupations (13 x 8) resulted in a statistically significant ($\alpha = .05$) multivariate main effect for the occupation factor on skill clusters. This main effect may be interpreted as indicating the presence of real differences between mean centroids for the eight occupations when the means for the 13 skill clusters were considered simultaneously.

TABLE 20.

Multivariate Analysis of Variance on Number of Skill Deficit Occurrences Permissible Prior to Employee Termination as a Function of Occupation

Source of Variance	Pillai's Trace	Approx. *F*-Ratio	Hypoth. *df*	Error *df*	Signif. of *F*
Skill Clusters (13) X Occupations (8)	1.83	1.72	91.0	441.0	.000*

*Significant at or above the 0.01 level of confidence.

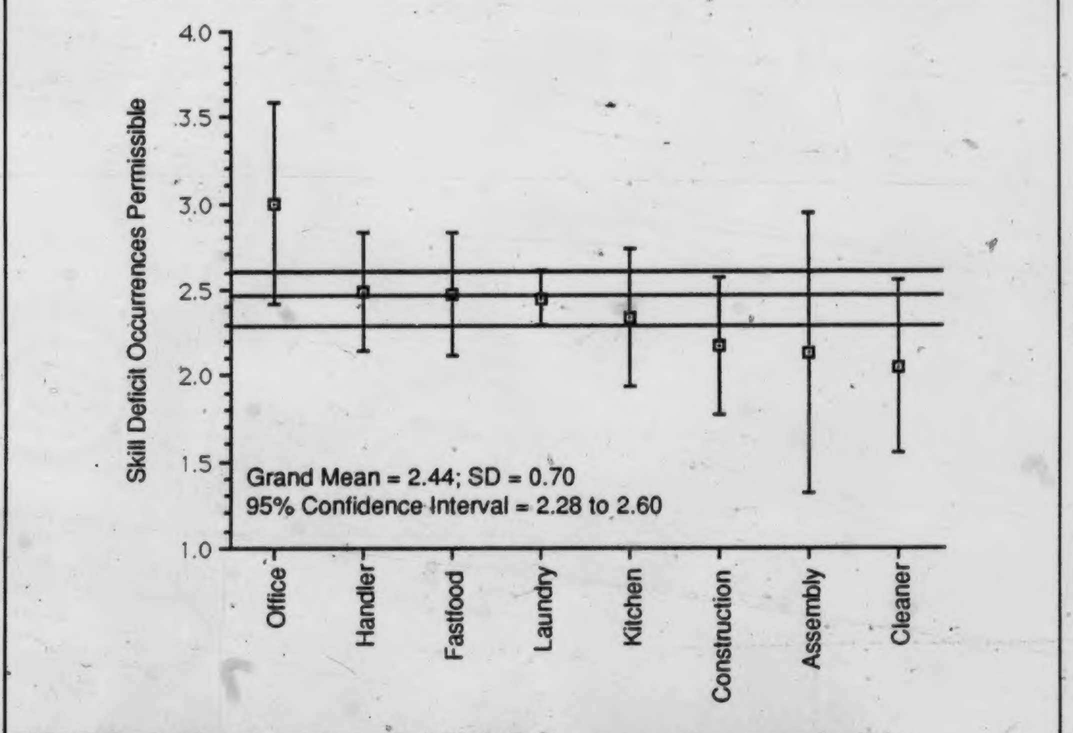

FIGURE 13. Mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for occupations collapsed over skill clusters.

Differences between occupations in employers' overall level of tolerance for new employee mistakes and incompetencies may be most readily seen in Figure 13 (previous page). This figure plots the mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for each of the eight entry-level occupations collapsed over the 13 skill clusters. In addition, Figure 13 also plots the grand mean and associated upper and lower 95% confidence bounds for the occupations as a group (dashed lines). Individual occupation means are plotted in order of decreasing size, from left to right. That is, employers in occupations plotted on the right of the figure are generally less tolerant of employee skill deficits than those plotted on the left.

To identify which individual skill clusters showed significant variation in the number of skill deficit occurrences permissible prior to employee termination as a function of the occupation factor, the full-factorial MANOVA was followed by a series of ANOVAs on each of the 13 skill clusters by the occupation factor. With the critical alpha value for each of these univariate F-tests adjusted to 0.004 so as to maintain an experiment-wise alpha of .05, statistically significant main effects for occupation were obtained with respect to only three skill clusters—"Appearance", "Safety", and "Instructions". All three of these significant univariate main effects for the occupation factor were examined further by means of Scheffé post hoc multiple comparisons which incorporate a correction for the number of comparisons made. The criterion alpha for these post hoc contrasts was set at a somewhat liberal 0.05 level since the Scheffé method is quite conservative for pair-wise comparisons of means. The results of these significant F-tests and associated Scheffé contrasts are presented in the following three subsections.

Personal Appearance, Hygiene and Health Cluster. Table 21 presents the results of the univariate main effects test for the occupation factor on the "Appearance" skill cluster, as well as the results of the 28 Scheffé post hoc comparisons between individual occupations. In addition, Table 21 presents the mean and standard deviation of the number of skill deficit occurrences permissible prior to employee termination with respect to the "Appearance" skill cluster for each of the eight occupations. The table also gives the univariate 95% confidence intervals for each of the eight means.

TABLE 21.

Univariate Main Effects Test on Number of Skill Deficit Occurrences Permissible Prior to Employee Termination for the "Personal Appearance, Hygiene & Health" Skill Cluster and Post Hoc Comparisons Between Occupations

C1. Appearance, Hygiene & Health

Source	*df*	SS	MS	*F*-Ratio	Prob.
Between Groups	7	23.06	3.29	5.09	.000*
Within Groups	69	44.64	0.65		
Total	76	67.70			

M = 2.61, *SD* = 0.94, 95% C.I. = 2.08 to 3.14

Occupation		Mean	*SD*	95% C.I. for Mean			Multiple Comparisons (*p* <.05)
1	Kitchen	1.94	0.72	1.55	to	2.32	Occup 1 = 2, 3, 4, 5, 6, 7, 8
2	Laundry	2.82	0.54	2.37	to	3.27	Occup 2 = 1, 3, 4, 5, 6, 7, 8
3	Handler	2.87	0.49	2.58	to	3.15	Occup 3 = 1, 2, 4, 5, 6, 7, 8
4	Assembly	3.62	0.66	2.57	to	4.67	Occup 4 > 7
5	Office	3.00	1.27	2.24	to	3.77	Occup 5 = 1, 2, 3, 4, 6, 7, 8
6	Cleaner	2.71	0.89	2.07	to	3.34	Occup 6 = 1, 2, 3, 4, 5, 7, 8
7	Fastfood	1.48	0.52	0.94	to	2.03	Occup 7 < 4
8	Construction	2.97	0.73	2.20	to	3.73	Occup 8 = 1, 2, 3, 4, 5, 6, 7

*Significant at or above the 0.004 level of confidence.

Although there was a highly significant univariate main effect for the occupation factor on the "Appearance" skill cluster, only one of the post hoc comparisons between the eight occupations was significant at the 0.05 level of confidence. This single statistically significant difference was between the Assembly and Fastfood occupations. The employers of workers in the Assembly occupation generally showed the greatest overall tolerance for such employee deficits and failings as: lacking the physical stamina required to work a full day, coming to work while ill, dressing inappropriately for work, demonstrating unacceptable personal hygiene and grooming, and failing to wash hands after using the toilet. By way of contrast, employers of workers in the Fastfood occupation demonstrated the least tolerance for employee failings in these skills. This relative intolerance was especially apparent with respect to skills related to personal hygiene. Although no other post hoc comparisons attained statistical significance, the differences between the Fastfood and Handler, the Kitchen and Assembly, as well as the Kitchen and Handler occupations approached statistical significance at the 0.05 level of confidence.

The pattern of employers' tolerance for deficits in the "Appearance" skill cluster across the eight entry-level occupations may be most readily seen in Figure 14 (next page). This figure plots the mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for each of the eight occupations. In addition, Figure 14 plots the grand mean over occupations and the upper and lower 95% confidence bounds for the grand mean. Occupations are listed from left to right in order of decreasing mean number of skill deficit occurrences permissible prior to termination. That is, the employers in occupations on the right of the plot are less tolerant of skill deficits related to the "Appearance" cluster than are those on the left.

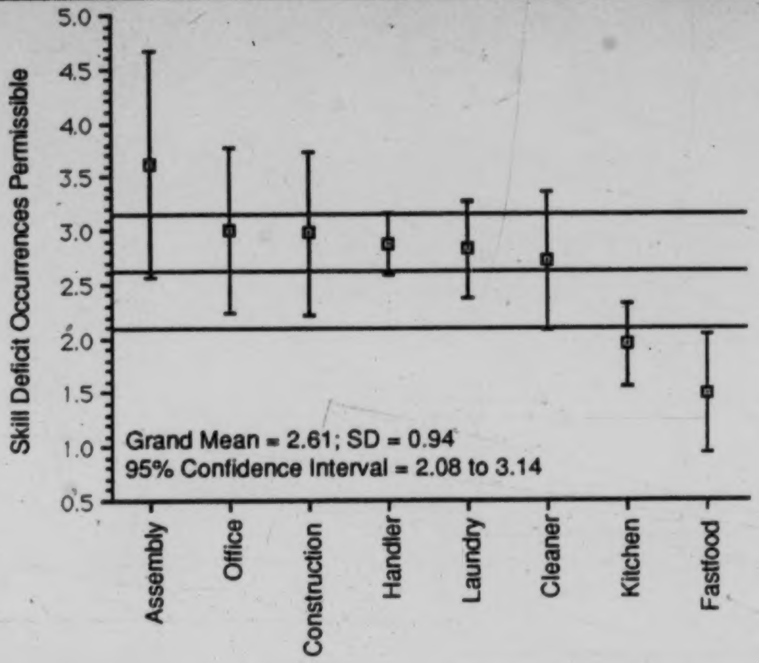

FIGURE 14. "Personal Appearance, Hygiene and Health" skill cluster. Means and associated univariate 95% confidence intervals for the number of skill deficit occurrences permissible prior to employee termination as a function of occupation.

Safe Work Behaviour and Safety Awareness Skill Cluster. Table 22 (following page) presents the results of the univariate main effects test for the occupation factor on the "Safety" skill cluster. The table also presents the results of the Scheffé post hoc comparisons between individual occupations on the "Safety" skill cluster. In addition to the results of these tests, Table 22 also gives the means, standard deviations, and univariate 95% confidence intervals for each of the eight occupations on the "Safety" cluster. Examination of Table 22 reveals that there was a highly significant univariate main effect for the occupation factor on the "Safety" skill cluster but that only two of the post hoc comparisons between occupations attained significance at the 0.05 level of confidence. These two significant differences were between the Fastfood and Assembly occupations, and the Fastfood and Cleaner occupations.

TABLE 22.

Univariate Main Effects Test on the Number of Skill Deficit Occurrences Permissible Prior to Employee Termination for the "Safe Work Behaviour & Safety Awareness" Skill Cluster and Post Hoc Comparisons Between Occupations

C2. Safe Work Behaviour & Safety Awareness

Source	*df*	SS	MS	*F*-Ratio	Prob.
Between Groups	7	10.02	1.43	3.38	.004*
Within Groups	69	29.21	0.43		
Total	76	39.23			

M = 1.91, *SD* = 0.72, 95% C.I. = 1.57 to 2.26

Occupation		Mean	*SD*	95% C.I. for Mean			Multiple Comparisons ($p < .05$)
1	Kitchen	1.76	0.58	1.45	to	2.07	Occup 1 <.7
2	Laundry	2.13	0.40	1.79	to	2.46	Occup 2 = 1, 3, 4, 5, 6, 7, 8
3	Handler	1.84	0.52	1.54	to	2.14	Occup 3 = 1, 2, 4, 5, 6, 7, 8
4	Assembly	1.44	0.13	1.24	to	1.64	Occup 4 = 1, 2, 3, 5, 6, 7, 8
5	Office	2.04	0.81	1.55	to	2.53	Occup 5 = 1, 2, 3, 4, 6, 7, 8
6	Cleaner	1.65	0.52	1.28	to	2.02	Occup 6 < 7
7	Fastfood	2.99	1.29	1.64	to	4.33	Occup 7 > 1, 6
8	Construction	1.63	0.41	1.19	to	2.06	Occup 8 = 1, 2, 3, 4, 5, 6, 7

*Significant at or above the 0.004 level of confidence.

Employers of workers in the Fastfood occupation generally demonstrated the greatest overall tolerance for employee failings related to safe behaviour in the workplace. At the other extreme, employers of workers in the Assembly and Cleaner occupations demonstrated the least amount of tolerance for employee skill deficits and mistakes associated with the maintenance of job safety. Employers of workers in the Construction and Kitchen occupations also demonstrated relatively low tolerance for employee deficits in safety-related skills but the differences between these two occupations and Fastfood did not quite reach statistical significance at the 0.05 level of confidence. No other post hoc comparisons even came close to attaining statistical significance.

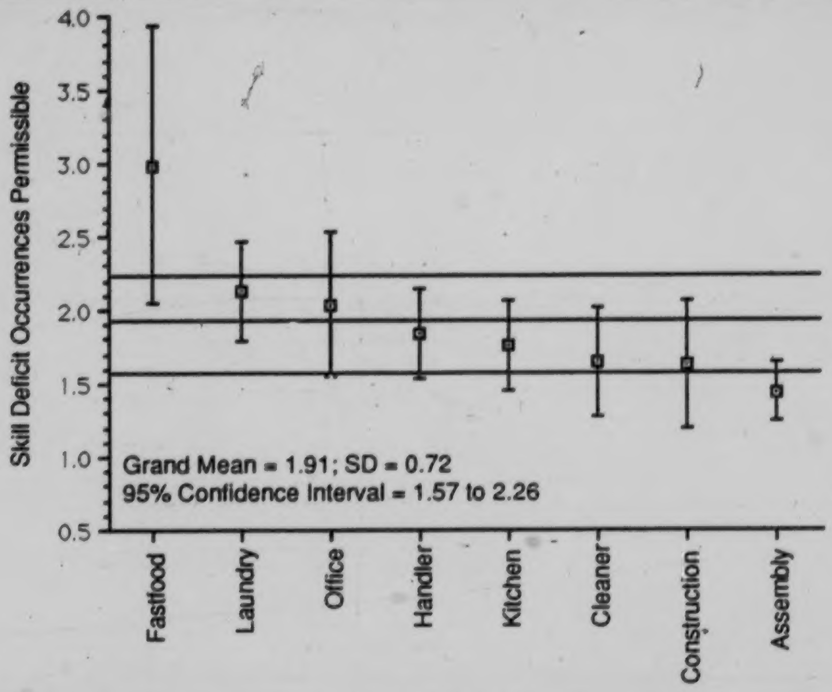

FIGURE 15. "Safe Work Behaviour and Safety Awareness" skill cluster. Means and associated univariate 95% confidence intervals for the number of skill deficit occurrences permissible prior to employee termination as a function of occupation.

The pattern of employers' tolerance for skill deficits and failings with respect to safety on the job across the eight entry-level occupations may be most clearly seen in Figure 15 (above). This figure plots the mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for each of the eight occupations. Figure 15 also plots the grand mean over occupations and the upper and lower 95% confidence bounds for the grand mean (dashed lines). Occupations are listed from left to right in order of decreasing mean number of permissible skill deficits.

Ability to Follow Instructions, Rules, and Schedules Skill Cluster. Table 23 presents the results of the univariate main effects test for the occupation factor on the "Instructions" skill cluster as well as the results of the Scheffé post hoc comparisons between occupations.

TABLE 23.

Univariate Main Effects Test on the Number of Skill Deficit Occurrences Permissible Prior to Employee Termination for the "Ability to Follow Instructions, Rules & Schedules" Skill Cluster and Post Hoc Comparisons Between Occupations

C10. Ability to Follow Instructions, Rules & Schedules

Source	*df*	SS	MS	*F*-Ratio	Prob.
Between Groups	7	19.97	2.85	3.43	.003*
Within Groups	69	57.42	0.83		
Total	76	77.39			

$\underline{M}$ = 2.51, *SD* = 1.01, 95% C.I. = 2.03 to 3.00

	Occupation	Mean	*SD*	95% C.I. for Mean			Multiple Comparisons (*p* <.05)
1	Kitchen	2.33	0.85	1.87	to	2.78	Occup 1 = 2, 3, 4, 5, 6, 7, 8
2	Laundry	2.35	0.42	2.00	to	2.70	Occup 2 = 1, 3, 4, 5, 6, 7, 8
3	Handler	2.34	0.76	1.91	to	2.78	Occup 3 = 1, 2, 4, 5, 6, 7, 8
4	Assembly	2.10	0.76	0.90	to	3.30	Occup 4 = 1, 2, 3, 5, 6, 7, 8
5	Office	3.58	1.40	2.74	to	4.43	Occup 5 > 6
6	Cleaner	1.98	0.86	1.37	to	2.59	Occup 6 < 5
7	Fastfood	2.67	0.82	1.81	to	3.52	Occup 7 = 1, 2, 3, 4, 5, 6, 8
8	Construction	2.33	0.70	1.60	to	3.07	Occup 8 = 1, 2, 3, 4, 5, 6, 7

*Significant at or above the 0.004 level of confidence.

Examination of the results tabled above reveal a significant univariate main effect for the occupation factor on the "Instructions" skill cluster, but only the Office and Cleaner occupations differed from each other with respect to the mean number of skill deficit occurrences permissible with respect to the ability to follow instructions, rules and schedules. Employers of workers in the Office occupation demonstrated significantly greater tolerance for employee behaviours such as failing to carry out instructions, failing to follow company rules or policy, failing to follow area or daily work schedules, or being unable to follow routine instructions without detailed demonstration or clarification than did employers in the Cleaner occupation. No other post hoc comparisons between occupations attained statistical significance.

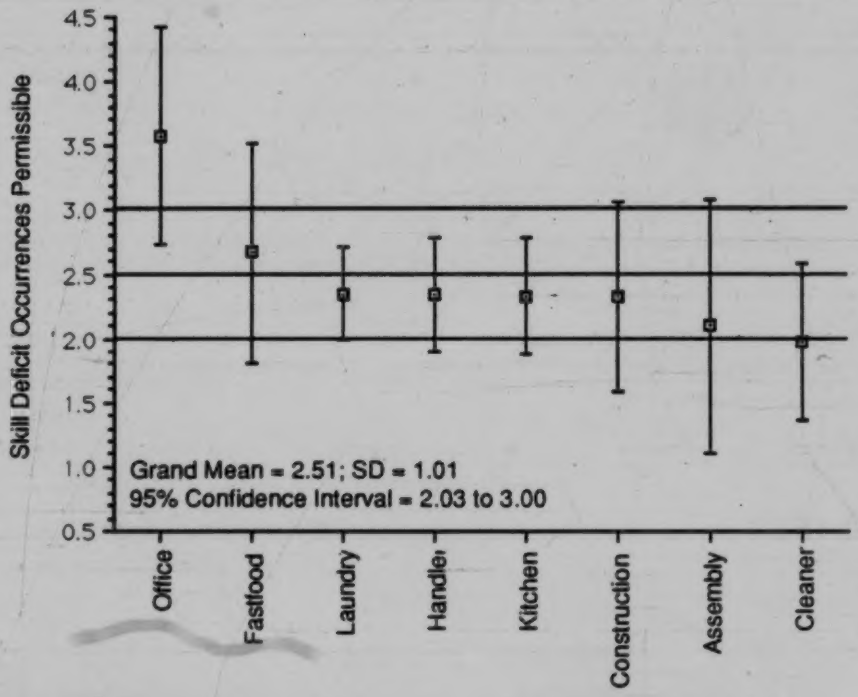

FIGURE 16. "Ability to Follow Instructions, Rules & Schedules" skill cluster. Means and associated univariate 95% confidence intervals for the number of skill deficit occurrences permissible prior to employee termination as a function of occupation.

The pattern of relative tolerance for employee deficits in the "Instructions" skill cluster is best seen in Figure 16. This figure plots the mean number of skill deficit occurrences permissible prior to employee termination and associated univariate 95% confidence intervals for each of the eight occupations. Figure 16 also plots the grand mean across occupations as well as the upper and lower 95% confidence bounds for the grand mean. The occupation means are plotted from left to right in order of decreasing size.

Rated Frequency of Skill Deficit Occurrences in New Employees

As well as being asked to specify the number of skill deficit occurrences permissible prior to employee termination, employers were also asked to indicate approximately how often the average new employee demonstrates each of the skill deficits listed in the Standards Survey during the "training to standard" period[1]. These frequency ratings were carried out on a 5-point Likert scale printed to the right of each skill deficit statement in the Standards Survey. This rating scale was simply marked with the numerals one to five, and anchored at the low end (1) by the label "never" and at the high end (5) by the label "always". For each of the 94 skill deficit statements presented in the Standards Survey, employers were required to circle the point on the rating scale that best approximated the average frequency of occurrence in new employees during the "training to standard period" that they had previously specified in the questionnaire. These ratings would permit some comparisons between areas of employee skill deficit with respect to frequency of occurrence.

The means and standard deviations of the frequency ratings for each of the 13 skill clusters collapsed over occupations, as well as for each of the eight occupations individually, are presented in Table 24 (following page). Skill clusters are listed from the top down in order of decreasing mean frequency of occurrence collapsed over occupations. Similarly, occupations are listed from left to right in order of increasing mean frequency ratings collapsed over skill clusters. The first two data columns in Table 24 present the mean frequency ratings and standard deviations for each of the skill clusters collapsed over occupations, whereas the remaining eight data columns present mean frequency ratings for individual skill clusters within individual occupations. The last two rows of the table present the mean frequency ratings and standard deviations for each of the eight occupations collapsed over the 13 skill clusters.

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[1] The "training to standard" period was specified by each employer individually in question #2 on the first page of the Standards Survey form (see Appendix F).

Examination of the mean frequency ratings presented in Table 24 reveals relatively little variance in employers' ratings for the different skill clusters across occupations. The grand mean of the frequency ratings was a relatively moderate 2.05 (*SD* = 0.37), with ratings ranging from a low of 1.26 for deficits in the "Prevocational" skills cluster by employers in the Office occupation to a high of 3.13 for deficits in the "Production" skill cluster by employers in the Assembly occupation. A visual comparison of the mean ratings for the 13 skill clusters collapsed over occupations suggests that employee deficits in some of the 13 skill clusters may occur significantly more often than employee deficits in others. In general, it appears that skill deficits and failings related to the "Production" skill cluster are most common in new employees, whereas employee deficits related to competencies categorized within the "Prevocational" cluster are relatively uncommon.

TABLE 24.

Frequency of Skill Deficit Occurrences During Employee Training Period

		Total (N=77)		Occ7	Occ5	Occ6	Occ2	Occ1	Occ3	Occ8	Occ4
	Skill Cluster	Mean	*SD*	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
C6	Production Efficiency, Quantity, Quality & Consistency.	2.44	0.68	2.50	2.21	2.23	2.50	2.45	2.52	2.25	3.13
C9	Dependability, Reliability & Ability To Work Unsupervised.	2.37	0.53	2.15	2.36	2.15	2.23	2.56	2.48	2.48	2.28
C4	Attendance & Punctuality.	2.36	0.60	2.33	2.21	2.18	2.41	2.47	2.34	2.67	2.44
C11	Ability To Organize & Manage Information, Materials, Persons.	2.23	0.54	2.00	1.97	2.01	2.25	2.44	2.37	2.39	2.42
C12	Work Attitude, Work Ethic & Commitment To Work.	2.22	0.57	1.87	2.04	1.97	2.30	2.39	2.35	2.38	2.50
C5	Adaptability, Flexibility & Learning Proficiency.	2.11	0.54	1.86	1.83	1.95	2.10	2.15	2.38	2.28	2.46
C10	Ability To Follow Instructions, Rules & Schedules.	2.10	0.50	1.60	1.99	1.88	2.18	1.99	2.21	2.40	2.25
C13	Work-Related Social & Interpersonal Skills.	1.93	0.43	1.69	1.80	1.81	1.88	2.02	2.08	2.07	2.11
C2	Safe Work Behaviour & Safety Awareness.	1.93	0.58	1.33	1.46	2.20	2.06	2.00	2.05	2.38	2.06
C1	Appearance, Hygiene & Health.	1.92	0.48	1.64	1.82	1.92	1.88	2.02	1.92	2.19	2.00
C8	Affective Response To Supervision & Criticism.	1.81	0.51	1.68	1.83	1.60	1.53	1.91	2.04	1.75	1.94
C7	Emotional & Behavioural Self-Control.	1.80	0.56	1.83	1.67	1.68	1.53	1.83	2.09	1.88	1.75
C3	Basic Prevocational & Practical Skills.	1.47	0.35	1.41	1.26	1.36	1.48	1.49	1.59	1.79	1.57
All Skill Clusters:											
	Mean			1.84	1.88	1.92	2.03	2.15	2.19	2.22	2.24
	Standard Deviation			0.11	0.33	0.30	0.47	0.35	0.41	0.48	0.25

NOTE: Occ1 = Kitchen, Occ2 = Laundry, Occ3 = Handler, Occ4 = Assembly, Occ5 = Office, Occ6 = Cleaner, Occ7 = Fastfood, and Occ8 = Construction.

Differences Between Skill Clusters

The assumption of the equality of multivariate means for the 13 skill clusters was evaluated using the Hotelling's multivariate t-test procedure. The resulting significant T^2 statistic ($T^2 = 336.75$, $F_{(12/65)} = 24.00$, $p < .05$) suggests that there were significant differences in mean frequency ratings between some of the skill clusters when all eight occupational groups were considered simultaneously.

To determine which pairs of skill clusters actually differed in frequency of occurrence, the multivariate t-test was followed by univariate t-tests comparing the individual variable means. Differences between skill clusters in mean frequency ratings (collapsed over occupations) were compared by a series of 78 dependent samples two-tailed t-tests. The Bonferroni procedure was again used to adjust the critical value for Student's t such that the overall probability of finding a significant difference between skill cluster mean scores would remain at an acceptable five percent. With alpha set at 0.001 and a resulting critical $t_{(76)}$ equal to 3.25 for each paired-comparison, it was found that the majority (69%) of all differences between skill cluster pairs were statistically significant.

Table 25 (next page) presents the results of these dependent samples t-tests on skill cluster means collapsed over occupations. The upper right diagonal of the table presents calculated values of Student's t for differences between skill clusters in mean frequency of occurrence, whereas the lower left diagonal of the table presents actual difference scores for skill cluster pairs. A brief examination of the pattern of results presented in Table 25 suggests that the 13 skill clusters may be reasonably well differentiated into four groups of clusters each demonstrating minimal within group differences and maximal between group differences with respect to mean frequency ratings. Employer frequency ratings show that new employees most commonly demonstrate deficits in competencies related to the "Production", "Dependability" and "Attendance" skill clusters and that problems in these three skill areas occur about equally often. The second most common areas of new employee skill deficit involve those competencies included within the "Organization", "Work Attitude", "Adaptibility" and "Instructions" skill clusters. Somewhat less common than the aforementioned problem-areas are employee incompetencies related to the "Appearance", "Safety", "Affective Response", and "Self-Control" skill clusters. Lastly, the least common problem area for new employees appears to involve the "Prevocational" skill cluster.

TABLE 25.

Results of Dependent t-Tests Comparing Skill Clusters on Mean Frequency Ratings

	Skill Clusters												
	C6	C9	C4	C11	C12	C5	C10	C13	C1	C2	C8	C7	C3
	Upper right diagonal presents *t* values. With *df* = 76, critical value for *t* ≥ 3.25												
C6		0.88	0.89	2.79	2.99	**4.39**	**4.85**	7.19	**6.96**	**6.01**	**8.43**	**8.37**	**11.96**
C9	0.07		0.20	2.35	2.76	**3.88**	**4.50**	**8.65**	**8.39**	**6.36**	**8.50**	**8.30**	**13.33**
C4	0.08	0.01		1.77	2.38	3.11	**3.60**	**6.62**	**6.81**	**5.48**	**7.12**	**6.98**	**11.62**
C11	0.21	0.14	0.13		0.15	2.57	2.40	**7.10**	**5.94**	**4.27**	**7.39**	**6.95**	**13.37**
C12	0.22	0.15	0.14	0.01		1.86	2.32	**6.63**	**5.98**	**3.97**	**7.42**	**7.05**	**11.19**
C5	**0.33**	**0.26**	0.25	0.12	0.11		0.16	**4.19**	**3.45**	2.60	**5.06**	**5.17**	**11.10**
C10	**0.34**	**0.27**	**0.26**	0.13	0.12	0.01		**3.88**	**3.43**	2.41	**5.79**	**5.49**	**10.82**
C13	**0.51**	**0.44**	**0.43**	**0.30**	**0.29**	**0.18**	**0.17**		0.29	0.02	2.87	2.72	**9.58**
C1	**0.52**	**0.45**	**0.44**	**0.31**	**0.30**	**0.19**	**0.18**	0.01		0.16	1.94	2.05	**8.31**
C2	**0.51**	**0.44**	**0.43**	**0.30**	**0.29**	0.18	0.17	0.00	0.01		1.50	1.64	**6.65**
C8	**0.63**	**0.56**	**0.55**	**0.42**	**0.41**	**0.30**	**0.29**	0.12	0.11	0.12		0.21	**5.44**
C7	**0.64**	**0.57**	**0.56**	**0.43**	**0.42**	**0.31**	**0.30**	0.13	0.12	0.13	0.01		**5.03**
C3	**0.96**	**0.90**	**0.89**	**0.76**	**0.75**	**0.64**	**0.63**	**0.46**	**0.45**	**0.46**	**0.33**	**0.32**	
	Lower left diagonal presents differences between skill cluster means												

NOTE: Boldface indicates differences significant at the 0.001 level of two-tailed probability. Skill cluster names may be identified from Table 24 on page 171.

Differences in mean frequency of occurrence for employee deficits in the various competencies included within the 13 skill clusters may be most easily seen in Figure 17 (next page), which plots the mean frequency ratings and associated univariate 95% confidence intervals for each of the skill clusters. This figure also plots the grand mean across skill clusters and the upper and lower 95% confidence bounds for the grand mean. Skill cluster means are plotted from left to right in order of decreasing frequency of occurrence.

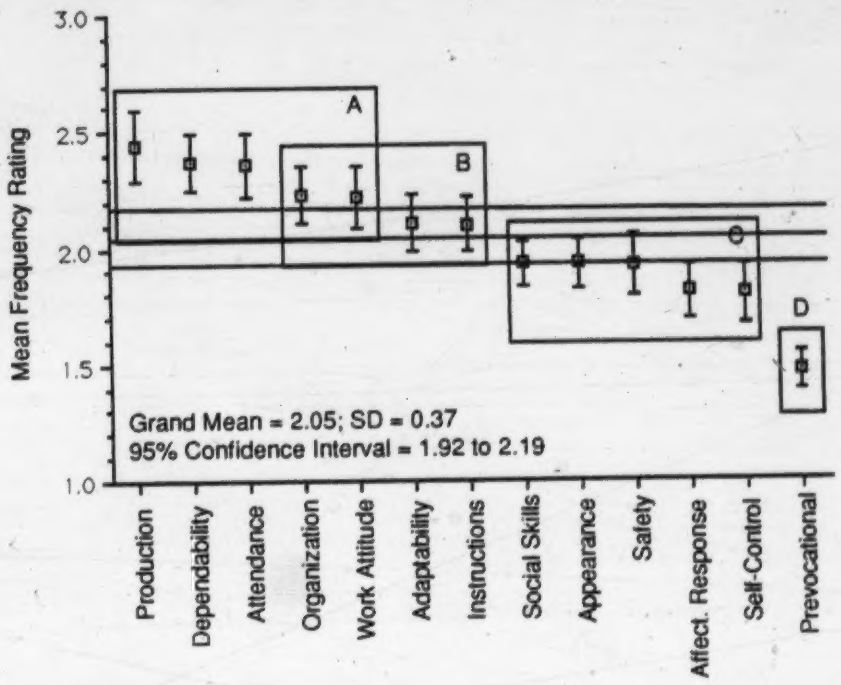

FIGURE 17. Mean frequency ratings of skill deficit occurrences and associated univariate 95% confidence intervals for skill clusters collapsed over occupations.

Differences Between Occupations

Figure 18 (following page) represents the main effect over skills for the occupation factor. The figure plots mean frequency of skill deficit occurrences and associated univariate 95% confidence intervals for the eight occupations collapsed over the 13 skill clusters. In addition, this figure shows the grand mean frequency rating across occupations and the upper and lower 95% confidence bounds for the grand mean. Individual occupation means are plotted in order of decreasing size, from left to right. Examination of Figure 18 reveals little apparent difference between mean frequency ratings over the eight occupations. This apparent lack of differences between occupations was confirmed by a MANOVA on mean frequency ratings for skill clusters by occupations which failed to attain statistical significance at the .05 level of confidence.

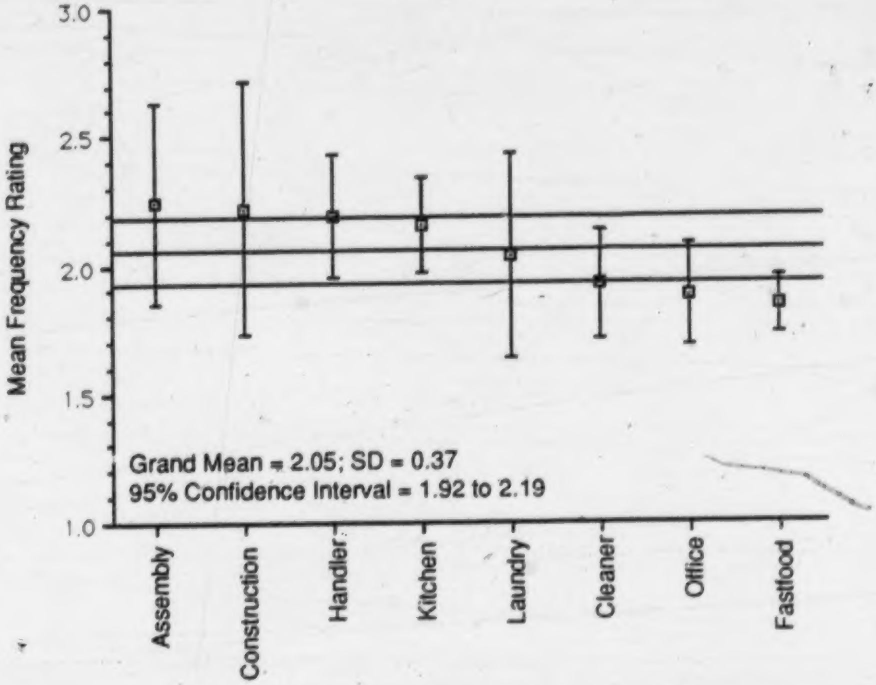

FIGURE 18. Mean frequency ratings of skill deficit occurrences and associated univariate 95% confidence intervals for occupations collapsed over skill clusters.

Rated Seriousness of Skill Deficit Occurrence in New Employees

The final task required of the employers that responded to the Standards Survey was to rate each of the 94 skill deficit statements with respect to the perceived seriousness of their occurrence in new employees. Specifically, each employer was asked to rate how seriously he or she would personally view an occurrence of each skill deficit or employee failing during a new employee's "training to standard" period (which they had previously specified). These ratings were again to be carried out using a 5-point Likert scale printed to the right of each skill deficit statement. This scale was marked with the numerals one to five and was anchored at the low end (1) by the words "Not Serious" and at the high end (5) by the words "Extremely Serious". Employers were simply to circle the point on the scale that best described their perception of the seriousness of each skill deficit occurrence.

The means and standard deviations of the seriousness ratings for each of the 13 skill clusters taken over all eight entry-level occupations, as well as the mean seriousness ratings for individual occupations, are presented in Table 26 (next page). The first two data columns in the table present the means and standard deviations for each of the 13 skill clusters collapsed over the eight occupations. Skill clusters are listed from the top down in order of decreasing rated seriousness. In a similar fashion, the last two rows of Table 26 present the means and standard deviations for each of the eight occupations collapsed over the 13 skill clusters. Occupations are presented from left to right in order of increasing mean ratings.

TABLE 26.

Seriousness of Skill Deficit Occurrences During Employee Training Period

		Total(*N.=.77*)		Occ8	Occ2	Occ7	Occ3	Occ1	Occ5	Occ4	Occ6
	Skill Cluster	Mean	*SD*	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
C8	Affective Response To Supervision & Criticism.	4.33	0.56	4.33	4.44	4.04	4.14	4.23	4.23	4.81	4.73
C2	Safe Work Behaviour & Safety Awareness.	4.29	0.79	4.88	4.31	2.83	4.63	4.52	3.94	4.31	4.38
C7	Emotional & Behavioural Self-Control.	4.16	0.64	4.08	3.84	3.96	3.91	4.33	4.29	4.25	4.43
C6	Production Efficiency, Quantity, Quality & Consistency.	4.01	0.61	4.13	4.38	3.54	3.86	4.02	3.89	4.06	4.25
C10	Ability To Follow Instructions, Rules & Schedules.	4.01	0.58	4.00	4.25	3.33	3.97	4.21	3.71	3.80	4.40
C13	Work-Related Social & Interpersonal Skills.	3.95	0.46	3.74	3.83	3.86	3.88	3.97	3.99	4.01	4.18
C4	Attendance & Punctuality.	3.93	0.57	3.96	3.78	3.96	3.95	4.03	3.83	4.31	3.80
C3	Basic Prevocational & Practical Skills.	3.86	0.66	3.43	4.13	3.60	3.86	3.82	4.34	3.61	3.57
C12	Work Attitude, Work Ethic & Commitment To Work.	3.83	0.51	4.03	3.61	3.81	3.76	3.83	3.74	4.13	3.99
C9	Dependability, Reliability & Ability To Work Unsupervised.	3.73	0.50	3.98	3.59	3.71	3.71	3.70	3.57	3.91	3.93
C11	Ability To Organize & Manage Information, Materials, Persons.	3.64	0.52	3.50	3.69	3.91	3.59	3.48	3.68	3.83	3.74
C1	Appearance, Hygiene & Health.	3.62	0.74	3.17	3.33	4.56	3.06	4.51	3.55	2.88	3.28
C5	Adaptability, Flexibility & Learning Proficiency.	3.60	0.60	3.33	3.42	3.92	3.55	3.60	3.50	4.13	3.72
All Skill Clusters:											
	Mean			3.74	3.83	3.86	3.88	3.97	3.99	4.01	4.18
	Standard Deviation			0.47	0.41	0.90	0.47	0.36	0.44	0.51	0.31

NOTE: Occ1 = Kitchen, Occ2 = Laundry, Occ3 = Handler, Occ4 = Assembly, Occ5 = Office, Occ6 =Cleaner, Occ7 = Fastfood, and Occ8 = Construction.

Examination of the mean seriousness ratings presented in Table 26 reveals relatively little variance in employers' ratings for the different skill clusters across occupations. The grand mean of the severity ratings was a relatively high 3.92 (*SD* = 0.33), with ratings for individual skill clusters ranging from a low of

2.88 for deficits in the "Appearance" skill cluster by employers in the Assembly occupation, to a high of 4.88 for deficits in the "Safety" skill cluster by employers in the Construction occupation. A visual inspection of the mean ratings for the 13 skill clusters collapsed over occupations suggests that employee deficits in some of the 13 skill clusters may be viewed as significantly more serious than employee deficits in other clusters. In general, it appears that employee skill deficits and failings related to the "Affective Response" skill cluster are viewed by employers as quite a bit more serious than employee deficits in the "Adaptability" skill cluster.

Differences Between Skill Clusters

The assumption of the equality of multivariate means for the 13 skill clusters was evaluated using the Hotelling's multivariate *t*-test procedure. The resulting significant T^2 statistic ($T^2 = 121.44$, $F_{(12/65)} = 8.66$, $p < .05$) suggests that there were significant differences in the mean seriousness ratings between some of the skill clusters when all eight occupational groups were considered simultaneously. To determine which skill clusters actually differed in rated seriousness of skill deficit occurrences, the multivariate *t*-test was followed by a series of 78 univariate *t*-tests comparing the variable means.

Table 27 (next page) presents the results of these dependent samples *t*-tests on skill cluster means collapsed over occupations. The table reveals that the 13 skill clusters may be reasonably well differentiated into three groups on the basis of employers' ratings of how seriously they would view skill deficit occurrences in new employees. Each of these groups of skill clusters show minimum within-group differences and maximum between-group differences in mean seriousness ratings.

TABLE 27.

Results of Dependent t-Tests Comparing Skill Clusters on Seriousness Ratings

Skill Clusters

Upper right diagonal presents *t* values. With *df* = 76, critical value for *t* ≥ 3.25

	C8	C2	C7	C6	C10	C13	C4	C3	C12	C9	C11	C1	C5
C8		0.38	2.47	**4.44**	**4.78**	**6.91**	**4.83**	**4.88**	**6.96**	**7.77**	**9.35**	**6.58**	**9.65**
C2	0.04		1.23	2.96	2.96	**3.60**	**3.71**	**3.61**	**4.47**	**5.94**	**6.07**	**5.20**	**5.95**
C7	0.17	0.13		1.83	1.98	**3.78**	2.72	3.15	**4.21**	**5.06**	**6.03**	**5.57**	**6.17**
C6	**0.32**	0.28	0.15		0.02	0.93	0.91	1.55	2.62	**3.54**	**5.09**	**3.64**	**5.10**
C10	**0.32**	0.28	0.15	0.00		0.97	0.94	1.64	2.72	**4.04**	**5.38**	**3.84**	**5.20**
C13	**0.38**	**0.34**	**0.21**	0.06	0.06		0.24	1.10	2.08	**3.33**	**5.58**	**3.79**	**5.65**
C4	**0.40**	**0.36**	0.23	0.08	0.08	0.02		0.76	1.36	3.20	**3.62**	3.23	**3.94**
C3	**0.47**	**0.43**	0.30	0.15	0.15	0.09	0.07		0.26	1.34	2.53	2.30	2.78
C12	**0.49**	**0.45**	**0.32**	0.18	0.17	0.11	0.10	0.02		1.79	**3.31**	2.30	**3.85**
C9	**0.51**	**0.44**	**0.43**	**0.30**	**0.29**	0.18	0.17	0.00	0.01		1.50	1.64	1.92
C11	**0.68**	**0.64**	**0.51**	**0.36**	**0.36**	**0.30**	**0.29**	0.21	**0.19**	0.09		0.27	0.75
C1	**0.71**	**0.67**	**0.54**	**0.39**	**0.39**	**0.33**	0.31	0.24	0.21	0.11	0.03		0.16
C5	**0.72**	**0.68**	**0.55**	**0.40**	**0.40**	**0.34**	**0.33**	0.25	**0.23**	0.13	0.04	0.02	

Lower left diagonal presents differences between skill cluster means.

NOTE: Boldface indicates differences significant at the 0.001 level of two-tailed probability. Skill cluster names may be identified from Table 26 on page 177.

The relative overlap between ratings on the 13 skill clusters as well as differences in the perceived seriousness of employee deficits in each skill area may be most easily seen in Figure 19 (next page) which plots mean severity ratings and associated univariate 95% confidence intervals for the 13 skill clusters collapsed over occupations. Close scrutiny of Figure 19 suggests that employers generally perceived skill deficit occurrences as being the most serious when they were related to the "Affective Response", "Safety" and "Self-Control" skill clusters (box A). At the opposite end of the continuum, employers generally rated skill deficit occurrences as being the least serious when they occurred in the areas defined by the "Organization", "Appearance", and "Adaptability" skill clusters (box

C). Skill deficits in other skill clusters were generally viewed as only moderately serious (box B).

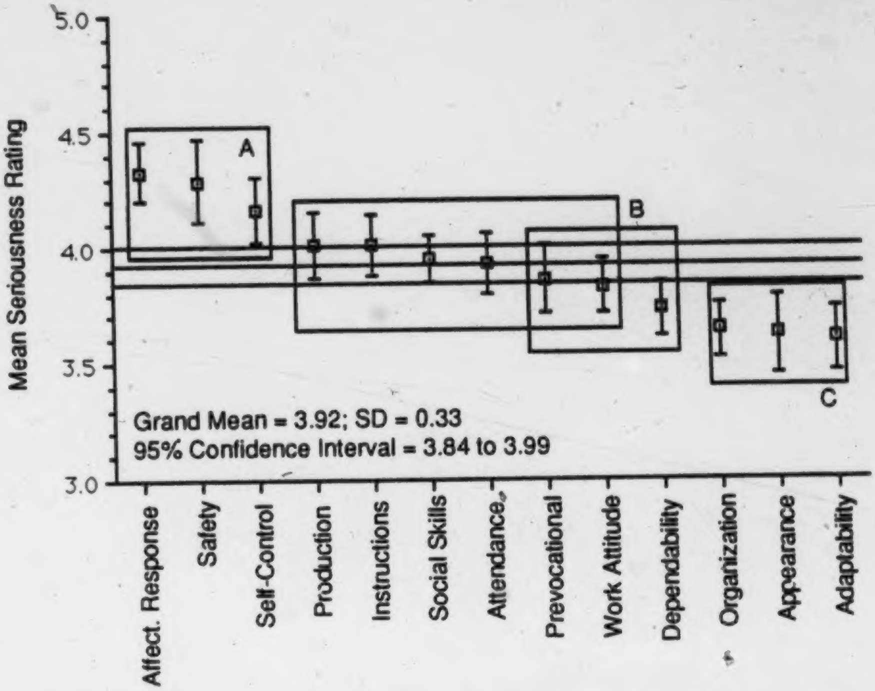

FIGURE 19. Mean seriousness ratings of skill deficit occurrences and associated univariate 95% confidence intervals for skill clusters collapsed over occupations.

Differences Between Occupations

Differences in employers' perceptions of the seriousness of employee deficits in skill clusters as a function of occupations were examined utilizing a sequential analysis procedure in which a MANOVA on the 13 skill clusters by the eight occupations was followed by univariate tests on individual skill clusters by the eight occupations, which in turn, were followed by post hoc contrasts between individual occupations for individual skill clusters.

Table 28 presents the results of the full-factorial MANOVA on skill clusters (13) by occupations (8). As may be seen in Table 28, the MANOVA on skill clusters by occupation resulted in a statistically significant multivariate main effect for the occupation factor on skill clusters. This main effect may be interpreted as indicating the presence of real differences between mean centroids for the eight occupations when the means for the 13 skill clusters are considered simultaneously.

TABLE 28.

Multivariate Analysis of Variance on Rated Seriousness of Skill Deficit Occurrences During Employee Training Period as a Function of Occupation

Source of Variance	Pillai's Trace	Approx. *F*-Ratio	Hypoth. *df*	Error *df*	Signif. of *F*
Skill Clusters (13) X Occupations (8)	2.27	2.32	91.0	441.0	.000*

*Significant at or above the 0.05 level of confidence.

Apparent differences between occupations in employers' ratings of the perceived seriousness new employees' mistakes and incompetencies may be most readily seen in Figure 20 (next page), which plots mean seriousness ratings and associated univariate 95% confidence intervals for each of the eight entry-level occupations collapsed over the 13 skill clusters.

To identify which skill clusters showed significant variation in rated seriousness of skill deficit occurrences as a function of occupation, the full-factorial MANOVA was followed by univariate *F*-tests on each of the skill clusters by the occupation factor. Significant main effects for the occupation factor were obtained on only three skill clusters— "Appearance", "Safety" and "Instructions". Scheffé post hoc tests were used to further examine these main effects and the resulting significant univariate *F*-tests and associated multiple comparisons on the occupation factor are presented in the following three subsections.

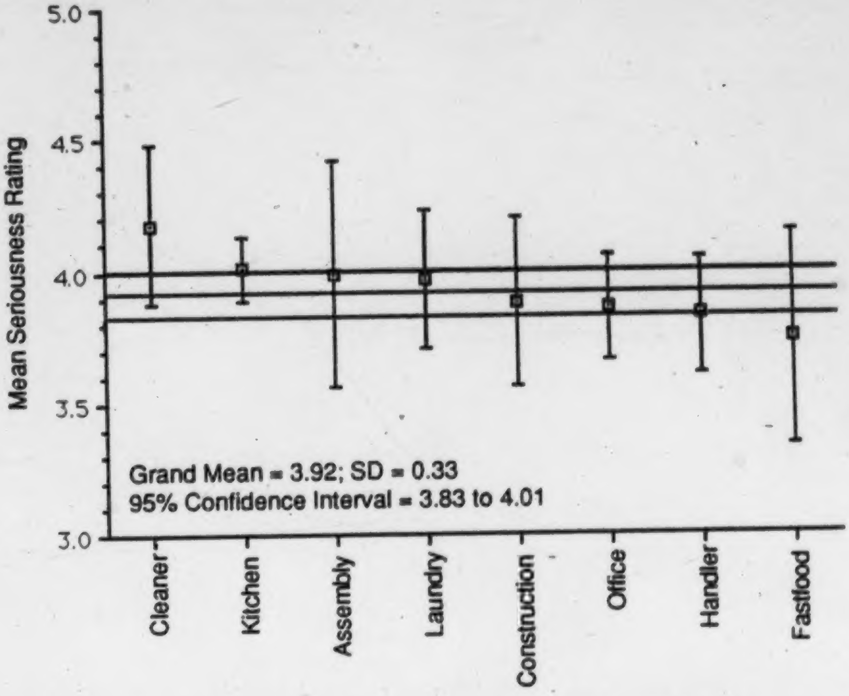

FIGURE 20. Mean seriousness ratings of skill deficit occurrences and associated univariate 95% confidence intervals for occupations collapsed over skill clusters.

Personal Appearance, Hygiene and Health Skill Cluster. Table 29 (next page) presents the results of a univariate main effects test for the occupation factor on the "Appearance" skill cluster as well as for Scheffé post hoc comparisons between the eight individual entry-level occupations.

As may be seen from Table 29, the univariate main effect for the occupation factor on the "Appearance" skill cluster was statistically significant at the .004 level of confidence. This result suggests that one or more of the individual occupations differed from the others in mean seriousness ratings.

Follow-up of this significant ANOVA with Scheffé multiple comparisons between individual occupations revealed that the main effect for occupation was accounted for by differences in the means for the Fastfood and Kitchen occupational groups only. The employers in these two occupational groups rated employee skill deficits related to the failure to maintain adequate personal appearance, hygiene and health as being significantly more serious than did the employers in any other occupational group. No other occupational groups differed from each other with respect to serious ratings on this skill cluster.

TABLE 29.

Univariate Main Effects Test on Rated Seriousness for the "Personal Appearance, Hygiene & Health" Skill Cluster and Post Hoc Comparisons Between Occupations

C1. Appearance, Hygiene & Health

Source	*df*	SS	MS	*F*-Ratio	Prob.
Between Groups	7	27.64	3.95	19.57	.000*
Within Groups	69	13.92	0.20		
Total	76	41.56			

$\underline{M}$ = 3.62, *SD* = 0.74, 95% C.I. = 3.45 to 3.78

Occupation		Mean	*SD*	95% C.I. for Mean			Multiple Comparisons (p <.05)
1	Kitchen	4.51	0.33	4.33	to	4.69	Occup 1 > 2, 3, 4, 5, 6, 8
2	Laundry	3.33	0.66	2.78	to	3.89	Occup 2 < 1, 7
3	Handler	3.06	0.43	2.81	to	3.31	Occup 3 < 1, 7
4	Assembly	2.88	0.21	2.54	to	3.21	Occup 4 < 1, 7
5	Office	3.55	0.63	3.17	to	3.93	Occup 5 < 1, 7
6	Cleaner	3.28	0.42	2.98	to	3.59	Occup 6 < 1, 7
7	Fastfood	4.56	0.20	4.34	to	4.77	Occup 7 > 2, 3, 4, 5, 6, 8
8	Construction	3.17	0.15	3.01	to	3.32	Occup 8 < 1, 7

*Significant at or above the 0.004 level of confidence.

The pattern of mean seriousness ratings for skill deficit occurrences in the "Appearance" skill cluster over occupations may be most clearly seen in Figure 21 (next page). This figure plots mean seriousness ratings and associated univariate 95% confidence intervals for each of the eight occupations, as well as the grand mean rating over occupations and the upper and lower 95% confidence bounds for the grand mean. Mean serious ratings for occupations are plotted from highest to lowest, left to right.

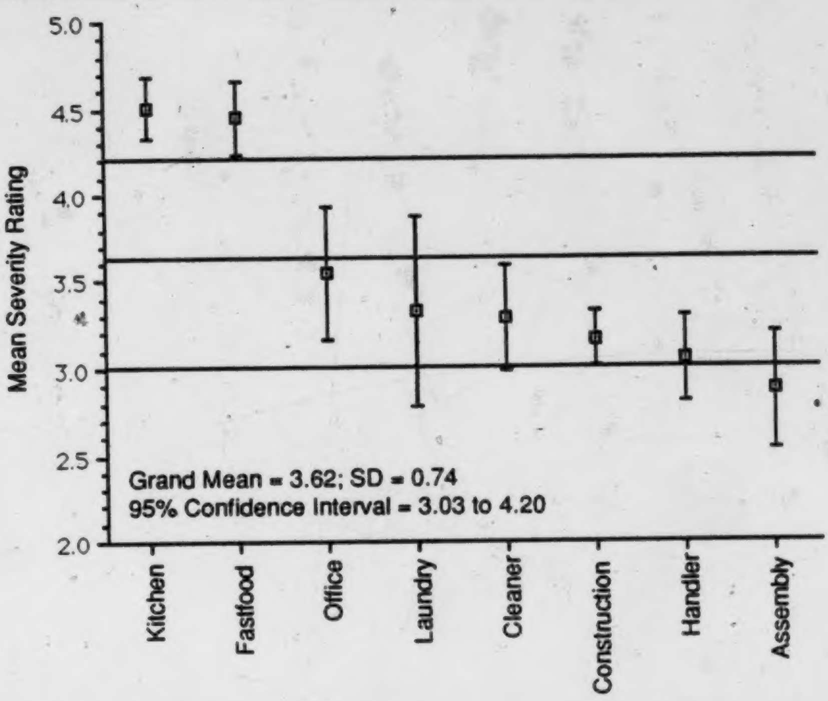

FIGURE 21. "Personal Appearance, Hygiene & Health" skill cluster. Mean seriousness ratings of skill deficit occurrences and associated univariate 95% confidence intervals as a function of occupation.

Safe Work Behaviour and Safety Awareness Skill Cluster. Table 30 (next page) presents the results of the univariate main effects test for the occupation factor on the "Safety" skill cluster as well as the results of Scheffé post hoc comparisons between individual occupations.

TABLE 30.

Univariate Main Effects Test on Rated Seriousness for the "Safe Work Behaviour & Safety Awareness" Skill Cluster and Post Hoc Comparisons Between Occupations

C2. Safe Work Behaviour & Safety Awareness

Source	*df*	SS	MS	*F*-Ratio	Prob.
Between Groups	7	18.82	2.69	6.53	.000*
Within Groups	69	28.40	0.41		
Total	76	47.21			

$\underline{M}$ = 4.29, *SD* = 0.79, 95% C.I. = 4.11 to 4.46

	Occupation	Mean	*SD*	95% C.I. for Mean			Multiple Comparisons ($p < .05$)
1	Kitchen	4.52	0.34	4.34	to	4.69	Occup 1 > 7
2	Laundry	4.31	0.74	3.69	to	4.93	Occup 2 > 7
3	Handler	4.63	0.49	4.34	to	4.91	Occup 3 > 7
4	Assembly	4.31	0.24	3.93	to	4.69	Occup 4 = 1, 2, 3, 5, 6, 7, 8
5	Office	3.94	0.79	3.47	to	4.41	Occup 5 = 1, 2, 3, 4, 6, 7, 8
6	Cleaner	4.38	0.68	3.89	to	4.86	Occup 6 > 7
7	Fastfood	2.83	1.26	1.51	to	4.16	Occup 7 < 1, 2, 3, 6, 8
8	Construction	4.88	0.21	4.66	to	5.09	Occup 8 > 7

*Significant at or above the 0.004 level of confidence.

Examination of Table 30 reveals a significant univariate main effect for the occupation factor on the "Safety" skill cluster. A series of Scheffé post hoc contrasts between individual occupations revealed that this main effect was due to the fact that employers in the Fastfood occupation rated skill deficits in the "Safety" cluster as being significantly less serious than did employers in any other occupation. No other differences between occupations were significant. However, although it is evident that a good number of the employers in the Fastfood occupation did not show themselves to be greatly concerned about employee skill deficits related to safety, this was not the case for all employers within this group. It must be noted that this group of employers showed the greatest variation in their ratings of the perceived seriousness of employee skill deficits in the "Safety" cluster.

This pattern of results across occupations is shown in Figure 22, which plots mean seriousness ratings and associated univariate 95% confidence intervals for each of the eight occupations. Figure 22 also plots the grand mean across occupations as well as the upper and lower 95% confidence bounds for the grand mean. Mean ratings for occupations are plotted from highest to lowest, left to right.

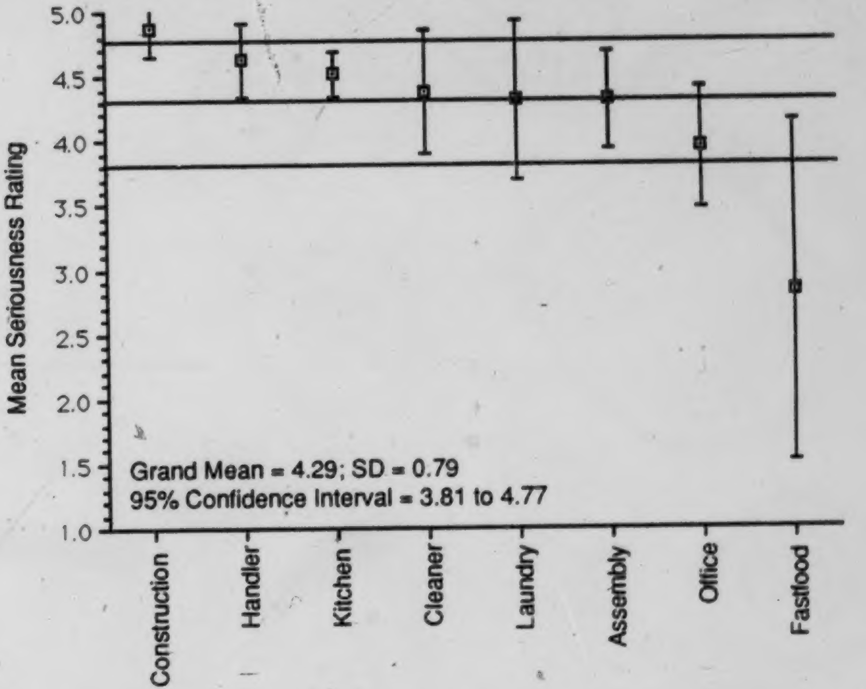

FIGURE 22. "Safe Work Behaviour & Safety Awareness" skill cluster. Mean seriousness ratings for skill deficit occurrences and associated univariate 95% confidence intervals as a function of occupation.

Ability to Follow Instructions, Rules and Schedules Skill Cluster. Table 31 (following page) presents the results of a univariate main effects test for the occupation factor on the "Instructions" skill cluster as well as the results of post hoc Scheffé contrasts between individual occupations. Again, the unprotected univariate main effects test was run with critical alpha set at 0.004 and the protected Scheffé contrasts were run with alpha set at the 0.05 level.

TABLE 31.

Univariate Main Effects Test on Rated Seriousness for the "Ability to Follow Instructions, Rules & Schedules" Skill Cluster and Post Hoc Comparisons Between Occupations

C10. Ability to Follow Instructions, Rules & Schedules

Source	*df*	SS	MS	*F*-Ratio	Prob.
Between Groups	7	6.77	0.97	3.48	.003*
Within Groups	69	19.15	0.28		
Total	76	25.92			

M = 4.01, *SD* = 0.58, 95% C.I. = 3.87 to 4.14

Occupation		Mean	*SD*	95% C.I. for Mean			Multiple Comparisons ($p < .05$)
1	Kitchen	4.21	0.38	4.01	to	4.42	Occup 1 = 2, 3, 4, 5, 6, 7, 8
2	Laundry	4.25	0.37	3.94	to	4.56	Occup 2 = 1, 3, 4, 5, 6, 7, 8
3	Handler	3.97	0.67	3.59	to	4.36	Occup 3 = 1, 2, 4, 5, 6, 7, 8
4	Assembly	3.80	0.57	2.90	to	4.70	Occup 4 = 1, 2, 3, 5, 6, 7, 8
5	Office	3.71	0.44	3.44	to	3.97	Occup 5 = 1, 2, 3, 4, 6, 7, 8
6	Cleaner	4.40	0.57	3.99	to	4.81	Occup 6 > 7
7	Fastfood	3.33	0.81	2.49	to	4.18	Occup 7 < 6
8	Construction	4.00	0.40	3.58	to	4.42	Occup 8 = 1, 2, 3, 4, 5, 6, 7

*Significant at or above the 0.004 level of confidence.

A perusal of Table 31 reveals a significant main effect for the occupation factor which is fully accounted for by one significant paired comparison. Employers of workers in the Cleaner occupation rated skill deficits in the "Instructions" cluster as significantly more serious than did employers of workers in the Fastfood occupation. No other differences in seriousness ratings on this skill cluster were significant. This pattern of results may be most clearly seen in Figure 23 (following page) which plots mean seriousness ratings and associated univariate 95% confidence intervals for each of the eight occupations. Also plotted are the grand mean over occupations and associated upper and lower 95% confidence bounds for the grand mean.

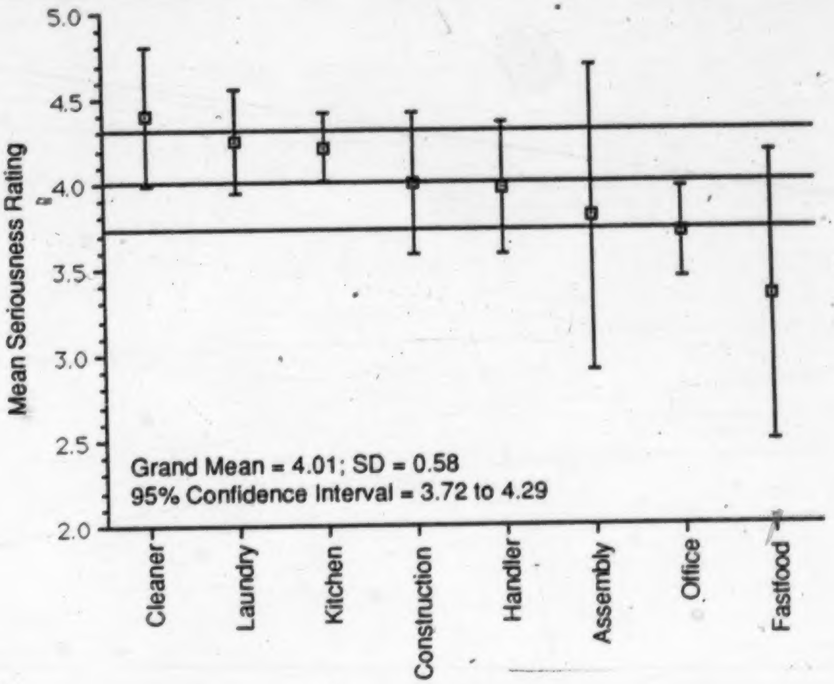

FIGURE 23. "Ability to Follow Instructions Rules & Schedules" skill Cluster. Mean seriousness ratings of skill deficit occurrences and associated univariate 95% confidence intervals as a function of occupation.

Comparison of Employer Ratings of Skill Deficits

It would seem quite reasonable to expect some type straight-forward relationship between the frequency with which certain skill deficits occur in new employees and employers' tolerance for skill deficit occurrences as well as their ratings of the perceived seriousness of such occurrences. Logically, one might assume that employers would show less tolerance for the occurrence of those employee deficits that they view as being most serious. In a similar vein, it would also seem reasonable to expect that those skill deficits that occur most commonly in new employees are likely to be viewed as less serious in nature than those that occur infrequently and that employers are likely to show greater tolerance for these commonly occurring employee deficits. If this were to be otherwise, few new employees would ever become experienced employees. These hypotheses would appear to be borne out by the pattern of interrelationships between the three sets of ratings generated in the present study.

TABLE 32.

Matrix of Pearson Product-Moment Correlations Between Number of Skill Deficit Occurrences Permissible Prior to Employee Termination, Rated Seriousness of Skill Deficit Occurences, and Frequency of Skill Deficit Occurrences for Skill Clusters

	Skill Clusters	Permissible vs Frequency	Permissible vs Seriousness	Frequency vs Seriousness
C1	Appearance	0.14	-0.68*	-0.13
C2	Safety	0.32*	-0.58*	0.24*
C3	Prevocational	0.16	-0.15	-0.24*
C4	Attendance	0.16	-0.04	0.12
C5	Adaptability	0.01	-0.37*	-0.10
C6	Production	0.06	-0.39*	-0.23*
C7	Self-Control	0.25*	-0.41*	-0.16
C8	Affective Response	0.17	-0.28*	-0.27*
C9	Dependability	0.23*	-0.47*	-0.20
C10	Instructions	0.07	-0.37*	-0.04
C11	Organization	0.10	-0.22*	-0.20
C12	Work Ethic	0.23*	-0.36*	-0.32*
C13	Social Skills	0.18	-0.32*	-0.25*
	All Skill Clusters	0.11	-0.38*	-0.24*

NOTE: Asterisks denote Pearson product-moment correlations significant at 0.05 level.

Table 32 presents a matrix of correlations between the number of skill deficit occurrences permissible prior to employee termination, the rated frequency of skill deficit occurrence, and the rated seriousness of skill deficit occurrence for each of the 13 skill clusters. The last row of the table presents the correlations between the three ratings for the combined skill clusters.

A brief examination of Table 32 reveals a number of interesting relationships. First, as expected, there was a small but statistically significant negative relationship between the frequency with which skill deficits occur in new employees and employers' perceptions of how serious their occurrence is. Generally speaking, it appears that less serious skill deficits occur more frequently than do more serious skill deficits. However, a marked exception to this general pattern was clearly apparent for the "Safety" skill cluster where the relationship between frequency and perceived seriousness was both positive and statistically significant. This reversal came about because, although employee deficits in safety-related skills were generally viewed as being very serious as well as being reported to occur quite infrequently, those employers who reported a higher occurrence of safety-related deficits in their new employees also tended to view such safety deficits more seriously. Not surprisingly, these employers also tended to be in occupations where the job entailed greater dangers to the employee (e.g., Kitchen, Construction, Handler).

Also as expected, there was a moderate and significant negative relationship between the number of skill deficit occurrences employers will permit before firing an employee and the perceived seriousness of the skill deficit occurrence. This relationship shows that employers tend to have less tolerance for those skill deficits which they view as being more serious. This relationship was statistically significant for all skill clusters except "Attendance" and "Prevocational". The reason for the lack of relationship between these two rating dimensions for the "Attendance" skill cluster remains unclear. However, the relationship between the two rating dimensions with respect to the "Prevocational" skills cluster was nearly the reverse of the general pattern. Employers showed extremely low tolerance for deficits in this cluster of skills, but tended to rate such deficits as only moderately serious.

A close examination of employers' responses with respect to the number of deficit occurrences permissible in the "Prevocational" cluster revealed that on average only 1.20 occurrences would be permissible before employers would fire the employee. But this average fails to reflect the true nature of employers' responses to the skill deficit items that comprise the "Prevocational" skill cluster. In fact, for many of the individual skill deficits in this cluster (e.g., "Unable to communicate basic needs...", "Demonstrates lack of basic skill in reading and speaking", "Cannot tell time...", "Demonstrates lack of basic skill in arithmetic or counting") a large minority of employers reported that they would permit zero occurrences. In the light of the fact that employers could mark "N/A" for any skill deficit statements that did not apply to their situation, a rating of zero would seem to indicate that they would not hire an individual lacking such a skill in the first place.

Finally, although there was generally no significant relationship between the frequency with which skill deficits occur in new employees and employers' tolerance for their occurrence, a few exceptions prove the rule that it is unlikely that employers would show extreme intolerance for common employee failings or, vice versa, that employees are unlikely to frequently demonstrate deficits for which employers have no tolerance. For example, there was a significant positive relationship between frequency and tolerance with respect to the "Safety" skill cluster. In this situation, employers generally rated safety-related deficits to occur relatively infrequently with new employees, but their tolerance for incompetent behaviour in the safety domain was extremely low. In a similar vein, problems related to employee behavioural and emotional self-control were rated as uncommon, but their occurrence was not tolerated. By way of contrast, employee deficits related to the "Dependability" and "Work Attitude" skill clusters occurred with somewhat greater frequency and were moderately well tolerated.

Comparison of Study One and Study Two Findings

In Study One employers were asked to rate 108 skills, grouped into 13 skill clusters, on their importance to job success in competitive employment. In Study Two a subgroup of these same employers were asked to rate skill deficit statements, which mirrored the 13 skill clusters in Study One, with respect to the number of skill deficit occurrences that would be permitted prior to employee termination, the frequency with which each skill deficit occurs in new employees, and their personal perception of the relative seriousness of each skill deficit. In this section the results of these four ratings will be broadly compared.

Table 33 (next page) presents the relative ordering of the 13 skill clusters with respect to each of the four rating dimensions based on mean rating scores across occupations. The rankings for the Importance, Seriousness, and Frequency ratings are in order of greatest to least, whereas the rankings for the Permissible rating is reversed, running from least tolerated to most tolerated.

Although one might think that employers' opinions on the relative importance of individual skill clusters to job survival would have some clear relationship to their tolerance for the occurrence of such skill deficits and how seriously they perceive employee deficits in these skill clusters to be, the data from the present study does not support such an assumption. In this respect, only the "Safety", "Organization", and "Adaptability" skill clusters clearly demonstrated the relationship that one might logically expect. For example, skills in the "Safety" cluster were rated as very important to job survival and employers showed that they view deficits in safety-related skills as being very serious and would readily fire an employee after only a few occurrences of incompetence in this skill area. Similarly, skills in the "Organization" and "Adaptabiliy skill clusters were rated by employers as relatively unimportant to job survival and employers showed that they do not view the absence of these skills as very serious and would not soon fire an employee who demonstrated incompetence in these skill areas.

TABLE 33.

Relative Ordering of Skill Clusters by Each of Four Ratings

–SKILLS–	–SKILL DEFICITS–		
Importance	Permissible	Seriousness	Frequency
Safety	Prevocational	Affective Response	Production
Attendance	Safety	Safety	Dependability
Dependability	Affective Response	Self-Control	Attendance
Appearance	Social	Instructions	Organization
Work Attitude	Self-Control	Production	Work Attitude
Instructions	Attendance	Social	Adaptability
Self-Control	Instructions	Attendance	Instructions
Production	Appearance	Prevocational	Safety
Affective Response	Work Attitude	Work Attitude	Social
Social	Dependability	Dependability	Appearance
Adaptability	Production	Organization	Affective Response
Organization	Organization	Appearance	Self-Control
Prevocational	Adaptability	Adaptability	Prevocational

NOTE: With the exception of column 2 of the table, skill clusters in each column are listed from top to bottom in order of decreasing mean rating scores. In column 2 skill clusters are listed from top to bottom in order of increasing number of skill deficit occurrences permissible prior to termination. For example, the presence of employee skills related to the "Safety" cluster was rated by employers as very high in importance, but the absence of these skills was rated very low in number of permissible occurrences, very high in seriousness, and moderate in relative frequency of occurrence.

Overall, the relative ranking of skill clusters based on employers' ratings of importance to job survival (column 1) shows no relationship with skill cluster rankings based on employers' tolerance for employee incompetence (column 2) in these clusters (rho = -0.08; $p > .05$), or with skill cluster rankings based on employers' perceptions of the seriousness of employee skill deficits (column 3) in these skill clusters (rho = 0.19; $p > .05$). These nonsignificant relationships suggest that employers do not necessarily view employee deficits in those skills deemed important to job survival as especially serious, nor will they promptly terminate new employees who demonstrate deficits in these "important" skill areas. On the other hand, a comparison of columns 1 and 4 of Table 33 reveals a small, but statistically significant, negative relationship between the ranking of skill clusters based on employers' ratings of the importance of individual skill clusters versus the ranking of skill clusters based on the frequency with which new employees demonstrate deficits in the individual skill domains (rho = -0.30; $p < .05$). Although the relationship is not especially strong, it suggests that new employees tend to demonstrate fewer deficits in those skill areas that employers believe to be most important to job success.

X. DISCUSSION

Study Two was designed to extend the findings of Study One, which surveyed a large sample of employers in entry-level occupations to obtain their opinions on what basic vocational and work-related social skills were most important to job success. Where Study One simply asked employers to rate a set of skills for their importance to success in competitive employment, the present study was focussed on determining the normal frequency with which deficits in the important worked-related skills identified previously occurred in new employees, as well as the level of tolerance among employers for such deficits. This primary purpose was accomplished by having employers rate a number of skill deficit statements that mirrored the skills surveyed in Study One with respect to three dimensions: (1) the number of skill deficit occurrences permissible in a new employee prior to his or her being involuntarily terminated, (2) the frequency with which each skill deficit normally occurs in new employees, and (3) the perceived seriousness of skill deficit occurrences. Other data were also collected in relation to essential job skills, common reasons for terminating employees, as well as employee probation periods, employee training periods, and average job tenure.

The results of this study must be interpreted with some caution in the light of the relatively limited overall sample size, especially with respect to the poor representation in some of the eight entry-level occupations targeted by the survey. Nevertheless, a number of interesting findings emerged from this follow-up survey and these will be discussed in some detail within subsequent subsections. Where relevant, the results of the present study will also be discussed within the context of the results of Study One.

A. EMPLOYEE PROBATION, TRAINING TIME AND JOB TENURE

The data collected from the Standards Survey with respect to probation periods for new employees, time required to train new employees to employers' standards, and average employee job tenure were secondary to the main purposes of the present study and, therefore, the discussion of these results will kept brief.

Employee Probation

Given the often rather informal nature of the entry-level employment settings surveyed in Study Two, it was somewhat surprising to find that over 80% of the surveyed employers reported having a policy of placing new employees on formal probation for some period of time. Only the employers of workers in the Construction occupation tended not to use probation periods with new employees. The average length of probation closely approximated three months but there was considerable variation across individual employers, with some reporting probation periods as short as two-weeks duration and one reporting a full year probation. Not surprisingly, the great majority of employers with probation policies reported that over 90% of their new employees successfully completed probation.

Training Time

One interesting finding was that the average formal probation period actually matched the average length of time that employers reported was required for new employees to fully come up to the employers' expectations and standards. Given the generally low levels of skill required to carry out the eight entry-level occupations targeted in the survey, it had been hypothesized by the researcher that formal employee probation periods, where they existed, would tend to be quite a bit longer than the time required to fully train new employees. This proved not to be the case. The approximately three months average amount of time required for training was slightly longer than expected and closely matched the mean length of reported probation periods.

The fact that employers seem quite prepared to permit new employees three months or more to fully learn the duties and requirements of even very low-skill, entry-level occupations would seem to bode well for the success of mentally disabled workers in these job settings. With appropriate on-site support and training by expert habilitation staff it ought to be possible to train even some severely mentally disabled workers to do these jobs within the three-month period that employers permit for training.

Job Tenure

Finally, given the extremely high average employee turnover rates typically reported for entry-level and minimum wage jobs in manufacturing (25-48%) and service industries (30-250%) (Brickey, Browning, & Campbell, 1982; Poplai, 1978) the mean length of job tenure reported for these entry-level occupations, at nearly two years with a median of 18 months, was considerably higher than expected. By way of comparison, Wanous et al. (1979) reported that of 1736 newly hired workers in low-wage blue-collar jobs, 73% quit or lost their jobs within the first seven months of employment. In a similar vein, in 1982 the National Hotel and Restaurant Association reported that the average job tenure of workers in entry-level food service jobs was only a little over five months (cited in Wehman, Hill, Hill, Brooke, Pendleton, & Britt, 1985) and, even more recently, *Restuarant & Institute Magazine* reported that the average length of employment for nonhandicapped workers in entry-level food service and janitorial jobs was less than six months (Annual Jobs Survey, 1984). The higher than expected job stability reported by the employers who answered the Standards Survey may be related to the fact that Alberta was well into a period of economic recession and high unemployment at the time of the survey, and workers may have been unusually reluctant to risk job changes for some years.

With respect to the hiring of mentally disabled workers into entry-level competitive jobs, a major selling point to employers has been that such workers are highly motivated and are willing to stay with these jobs for longer than average periods (Matkin, 1983; Parent & Everson, 1986). A commonly made claim is that mentally disabled persons can be helpful in stabilizing high turnover positions or in performing repetitive tasks that can be boring to some people (e.g., Ashcraft, 1979; Fishman, 1984; Lasden, 1982). Given the extremely high turnover rates reported for many entry-level jobs, few placement specialists who have used this standard sales pitch with employers have ended up being called liars. Fortunately, this situation should not change since some of the recent data on job tenure reported from supported employment programs compares quite favourably to even the extremely high average job tenure rates found in the present study (Brickey, Campbell, & Browning, 1985; Wehman, Hill, Hill, Brooke, Pendleton, & Britt, 1985).

B. ESSENTIAL JOB SKILLS VERSUS REASONS FOR JOB LOSS

In Study Two employers were asked to list five skills that they believed to be essential for job success as well as the five most common reasons for terminating employees. The responses to these two open-ended questions were categorized into six competency categories, three social (temperament, character, social awareness) and three nonsocial (production, health, economy), according to a framework developed by Greenspan and Shoultz (1981) and the distributions of categorized responses to the two questions were compared both across and between the eight entry-level occupations.

Of particular interest was the finding that the types of skills employers most commonly listed as essential to job success were not directly related to the reasons employers most often cited for firing workers. Although a few differences between occupations were noted, in order of decreasing frequency, skills and employee characteristics which could be classified into the production, social awareness, and character competence categories were most often listed as essential to job success. In contrast, the reasons most commonly cited for the termination of employees, also in decreasing order of frequency, were classified into the character, social awareness, and production competence categories.

On the basis of the present data, it would appear that employers are most likely to view skills related to the quantity and quality of work performance and output (e.g., production of satisfactory work, working quickly and accurately, being able to find work that needs to be done, being able to work unsupervised, following directions, etc.) as essential to job success, but they most often fire employees for failings related to the moral quality of their behaviour on the job (e.g., poor work attendance, job abandonment, unreliability and undependability on the job, dishonesty, theft, etc.). Although still a frequently cited category for dismissal, skill deficits related to the production category were cited significantly less often than those related to either character or social awareness. There was, however, considerably better agreement between the two lists with respect to skills related to social awareness— that is, understanding social cues, rules and norms of coworkers, supervisors and customers. Skills classified into the social awareness competence category were quite frequently cited as being essential to job success and failings in this skill domain (e.g., talking too much, disturbing other employees, complaining about duties to other employees and the public, showing a poor attitude toward work, being uncooperative, etc.) were almost equally often cited as reasons for dismissal.

Skills and employee characteristics related to the affective quality of workers' behaviour on the job were least often cited as essential for job success and also least often cited as reasons for employee dismissal. The temperament category of worker behaviour includes such things as controlling one's anger and frustration when under pressure at work, responding with appropriate affect to criticism and supervision, and aspects of the worker's behaviour that may suggest serious emotional disorder. In other parts of this study, problems with respect to such employee behaviours were rated by employers as occurring quite infrequently. Nevertheless, occurrences of such problem behaviours were viewed as quite serious and were not well tolerated by employers.

These results of the present study are quite consistent with the pattern of findings from two separate sets of research studies focussed on determining the factors associated with job tenure. One set of these studies has attempted to find out what skills are associated with success on the job (e.g., Alper, 1985; Burton, Chavez, & Kokaska, 1987; Rusch, Schutz, & Agran, 1982; Salzberg, Agran, & Lignugaris/Kraft, 1986), whereas the other set has attempted to determine why some workers lose their jobs (e.g., Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986; Kochany & Keller, 1981). As should be apparent from the discussion on pages 24 to 48, studies that have asked employers what skills are most important for employment success have most often reported production-related skills to top the list, whereas those studies that have examined reasons for job loss have tended to find that failings in social skills, including those qualities of the employee that might be defined as character and temperament, were most often to blame.

The finding that production skills are viewed as most important by employers yet do not most frequently result in employee dismissal, is further validated by the results from Study One as well as other parts of the present study. For instance, employers in the present study rated employee deficits related to the "Production" skill cluster as being quite serious in their view, yet they also demonstrated a relatively high tolerance for such occurrences in new employees. This high tolerance for production-related deficits is also verified by the fact that employers rated such deficits as being quite common in new employees— more common than any other type of deficit. The overall results of Study One were also broadly consistent with this pattern. In Study One, in which employers rated the importance of selected skills for job success, it was found that employers viewed behaviours related to safety on the job, employee dependability and reliability, and positive attitudes toward work as having greater importance to employment survival than the majority of social skills.

Another interesting, although not totally unexpected finding, was that the skills deemed by employers to be essential for job success as well as the reasons for most commonly dismissing employees varied somewhat from one occupation to another. For example, it was generally found that production-related skills were most important to job success in the Laundry, Handler, Assembly, Cleaner, and Construction occupations, whereas skills in the social awareness category played a more important role in the Kitchen, Office, and Fastfood occupations. With respect to reasons for employee dismissal, character-related reasons were cited most often in all occupations but Assembly, where production-related reasons for job termination were cited more frequently. In the Kitchen, Office, and Fastfood occupations, the second most commonly cited category for employee dismissal was related to deficits in social awareness.

C. EMPLOYER TOLERANCE FOR SKILL DEFICIT OCCURRENCES IN NEW EMPLOYEES

The employers who responded to the present survey showed themselves to be quite a bit less tolerant of new employee skill deficits and incompetencies than this researcher had expected. Broadly speaking, the commonly heard, "Three strikes and you're out" criteria for terminating an employee appears to be rather lenient when compared with the employers who responded to the Standards Surveys. Collapsed over both the 13 skill clusters and eight occupations examined, the mean number of skill deficit occurrences that would be permissible before a new employee was fired was found to be only 2.44 occurrences. Nevertheless, although entry-level employers would appear to be a rather intolerant lot on the whole, their level of tolerance for employee skill deficits varied considerably from one skill cluster to another. For example, the employers in the present study proved generally more tolerant of new employees' incompetence and failings in the skills included within the "Adaptibility", "Organization", and "Production" skill clusters, whereas they proved considerably less tolerant of employee incompetence with respect to those skills included within the "Affective Response", "Safety", and "Prevocational" skill clusters. With respect to the first three skill areas, the "three strikes and you're out" maxim appeared to hold fast, whereas for the latter three skill clusters, employers generally reported that they would fire an employee after only one or two foul-ups.

That employers would demonstrate little tolerance for such safety-related incompetencies as failing to follow safety rules or procedures, or demonstrating a lack of attention in hazardous work areas, or responding inappropriately to safety-related verbal signals is not all that surprising. In a similar vein, it is probably not surprising that employers demonstrated little tolerance for such employee behaviours as complaining when asked to make corrections by a supervisor, or responding to criticism or instructions in a work disruptive manner; items which were included in the "Affective Response" cluster. But it did come as a bit of a surprise to this researcher that employers would show so little apparent tolerance for employee incompetence in the basic prevocational and practical skills area, especially in the light of the fact that in Study One these same skills were rated by employers as having very little importance to job survival. How does one explain this apparent contradiction?

One could argue that employers do not view the possession of basic prevocational skills (e.g., rudimentary communication, reading, and arithmetic skills) as being very important to job success because they take for granted that all employees will have these skills upon being hired. While it is certainly true that a number of workers in entry-level jobs do not have reading or arithmetic skills higher than elementary school levels and may be unsophisticated in their communication and daily living skills, it is likely that very few employers would even consider the possibility of hiring an employee who cannot read at all, or who cannot readily count objects, or who cannot communicate basic needs. When asked to check off skills important for job success, these rudimentary skills are likely to be beneath most employers' level of awareness because entry-level jobs do not require very high-level prevocational skills and the vast majority of adults already possess these skills at levels high enough to do the job.

Although possessing these rudimentary prevocational skills may be unimportant to a worker's success once he or she is in the job, the lack of such skills is apparently a different matter. As was previously discussed in the Results section, a close look at individual employers' responses to the individual items comprising the "Prevocational" skills cluster reveals that many employers were actually saying that they would not hire individuals who lacked many of these very basic prevocational skills, not that they would instantly fire an employee who lacked such skills. It would appear then that employers are saying that basic prevocational skills are unimportant to the employee who already has a job, but may be crucial to the employee who is seeking a job. To some extent this interpretation of the data is further supported by the fact that employers in the present study also rated the occurrence of deficits in the "Prevocational" skill cluster as moderately serious as well as reporting that very few new employees demonstrate deficits in these very basic skills.

Although it was generally found that employers' tolerance or intolerance of new employee deficits in the 13 skill clusters examined in the Standards Survey did not vary significantly as a function of occupation, a few exceptions to this general rule were noted. For instance, it was found that employers of workers in the Fastfood occupation were significantly less tolerant of skill deficits related to the maintenance of adequate grooming, personal hygiene, and health than were the employers of workers in the Assembly occupation. In contrast, it was also found that the employers of workers in Fastfood were significantly more tolerant of employee incompetence related to safety on the job than were employers of workers in the Kitchen and Cleaner occupations. Finally, it was noted that employers of workers in the Cleaner occupation were significantly less tolerant of employee deficits related to the ability to follow instructions, rules and schedules than were the employers of workers in the Office occupation.

These patterns of difference between occupations in the relative tolerance for certain types of skill deficits strike this researcher as being very much as one might expect. Certainly it cannot be considered surprising that employers in the Fastfood occupation show greater concern about their employees' appearance, hygiene and health, since these workers handle food and are very much in the public eye. As well, these employers must be concerned about not only meeting the minimum health standards required by law, but also the more stringent standards required by the public's perceptions with respect to an establishment's cleanliness and wholesomeness. Similarly, because there are few hazardous working conditions in the fastfood industry, it is also not very surprising that these same employers show relatively less, although still high, concern with respect to safety issues. The lack of hazardous working conditions is especially true of the particular Fastfood occupation— Counterman, Fastfood & Cafeteria— which was surveyed in this study. And finally, the finding that employers of commercial and industrial cleaners show less tolerance for deficits in the ability to follow instructions, rules and schedules is also to be expected, since cleaners often work alone following a tight and rigid schedule and must be adept at understanding and following the instructions for the many products they use.

The results of surveying employers with respect to their tolerance for employee skill deficits would seem to generally support a generic model of vocational training since there were few differences between occupations in the specific skill deficits that were or were not tolerated. Such a program would focus training on the group of skills whose absence was least tolerated by employers in all entry-level occupations. Based on these data, training objectives would take into account employers' level of intolerance for certain kinds of employee errors and failings by adjusting mastery criteria to more stringent levels in those skill areas.

D. RATED FREQUENCY OF SKILL DEFICIT OCCURRENCES IN NEW EMPLOYEES

In the present study employers were also asked to rate the 94 skills deficits listed in the Standards Survey with respect to how frequently they occur in new employees. It was found, on average, that none of the individual skill deficits listed in the Standards Survey occurred with any great frequency but, relative to the others, skill deficits related to the "Production", "Dependability", and "Attendance" skill clusters were the most common in new employees. Not surprisingly, employers' ratings showed that new employees were most likely to demonstrate problems with respect to meeting minimum standards for rate and quality of production, efficiency of time and motion, absenteeism and punctuality, requiring extra supervision, demonstrating poor ability to make job-related decisions on their own, and failing to make contact with supervisors when problems arise. As well as being the sort of problems cited in the research literature as all too common in low skill, entry-level employment (e.g., Beach, 1979; Ebert, Dennis, & Mueller, 1986; Kazanas & Wolff, 1972; Kimbrell & Vineyard, 1975; Kochany & Keller, 1981; Lee, 1984), the employers of the present survey tended to rate these problem behaviours as less serious than most and showed relatively high tolerance for their occurrence. This pattern of findings makes one wonder whether these problems are common because employers will tolerate them, or whether they are tolerated because they are so common.

At the other extreme, new employees were least likely to demonstrate skill deficits related to the "Prevocational" skill cluster. Employers' ratings revealed that new employees in the eight entry-level occupations surveyed rarely demonstrated problems such as being unable to get to work by own arrangement, being unable to communicate basic needs, being unable to tell time, or being unable to read or count. The reason for the relative rarity of new employee deficits in the "Prevocational" skill cluster, as stated previously, is likely the fact that employers do not hire individuals who lack these rudimentary skills. Nevertheless, should an employee be found to lack the rudimentary skills included within the "Prevocational" cluster, employers reported that they would view the problem as moderately serious but show reasonably high tolerance for the employee's incompetence. This somewhat contradictory attitude could be favourable for the employment maintenance of mentally disabled workers once the employer has been convinced to hire the worker.

No significant differences in the frequency with which certain types of skill deficits occurred were found between the eight occupations. It would appear that, although the tolerance for certain types of skill deficits as well as their perceived seriousness may vary to some extent between occupations, the same sort of problems occur with equal frequency in all entry-level occupations. This result would also seem to argue for a more generic approach to vocational skills training. Such an approach would focus on training those skills commonly found to be lacking in entry-level workers.

E. RATED SERIOUSNESS OF SKILL DEFICIT OCCURRENCES IN NEW EMPLOYEES

Employers were also asked to rate the 94 skill deficits listed in the Standards Survey with respect to how serious they personally perceived each deficit to be. It was found that the employers who completed the Standards Survey rated most of the listed skill deficits as moderately to very serious, but generally viewed employee deficits in the "Affective Response", "Safety", and "Self-Control" skill clusters as being the most serious. Viewed as especially serious were such employee behaviours as responding to instructions or criticism in a manner that is work disruptive, engaging in work disruptive outbursts, demonstrating unsafe work habits or engaging in unsafe behaviour, and demonstrating a lack of proper attention in hazardous work areas. On other parts of the Standards Survey, employers also demonstrated very low tolerance for the occurrence of those skill deficits included in these three skill clusters. But fortunately, skill deficits in these three areas were also rated as occurring relatively infrequently in new employees. By way of contrast, employers viewed employee deficits with respect to the "Organization", "Appearance", and "Adaptability" skill clusters as the least serious overall. Not surprisingly, employer tolerance for deficits in these areas was quite high and these employee deficits also were reported to occur relatively frequently.

Although it was generally found that employers' perceptions with respect to the seriousness of new employee deficits in the 13 skill clusters examined in the Standards Survey did not vary significantly as a function of occupation, a few exceptions to this general rule were noted. For instance, it was found that employers of workers in the Kitchen and Fastfood occupations viewed deficits in the "Appearance" skills cluster as being significantly more serious than did employers of workers in any other occupation. In contrast, employers of workers in the Fastfood occupation viewed employee deficits with respect to the "Safety" skill cluster as significantly less serious than did employers of workers in any other occupation. Finally, the employers of workers in the Cleaner occupation viewed employee skill deficits related to the "Instructions" cluster as being significantly more serious than did employers of workers in the Fastfood occupation.

This pattern of findings with respect to occupational differences in the perceived severity of certain employee skill deficits almost exactly matches the pattern with respect to employers' tolerance of these same skill deficits. The employers of workers in the Fastfood occupation view deficits in skills related to "Appearance" as quite serious and they do not tolerate them. Whereas, these same employers do not see employee deficits in skills related to the "Safety" cluster as quite so serious and they show a higher tolerance for such deficits. In a similar vein, employers of workers in the Cleaner occupation perceive deficits in the "Instructions" skill cluster as serious and show little tolerance for such deficits.

F. SUMMARY

The main findings of Study Two may be briefly summarized as follows:

(1) A comparison of the skills that employers listed as essential for job success versus the common reasons for dismissing new employees resulted in the finding that new employees are not generally fired because they lack essential job skills. Employers most often cited skills related directly to the quantity and quality of work performance and output as being essential to success in competitive employment, but they most often reported firing new employees

for failings related to the moral quality of their behaviour in the workplace. Employers least often cited skills and characteristics related to the affective quality of workers' behaviour in the workplace as being essential to employment success, and these aspects of workers were also least often cited as reasons for terminating employees.

(2) Employers in the eight entry-level occupations examined in the present study showed themselves to be least tolerant of employee skill deficits and failings related to the "Prevocational", "Safety", and "Affective Response" skill clusters. Based on the number of skill deficit occurrences permissible prior to employee termination, employee incompetence and failings with respect to these three areas will most quickly result in involuntary termination. At the opposite extreme, employers were generally most tolerant of employee deficits related to the "Adaptibility", "Organization", and "Production" skill clusters. Only a few differences in employer tolerance for skill deficits were noted as a function of occupation. Employers of workers in Fastfood were especially intolerant of employee deficits with respect to the "Appearance" skill cluster but showed the highest tolerance for employee deficits in the "Safety" cluster. In contrast, employers of workers in the Kitchen and Cleaner occupations were most intolerant of employee deficits in the "Safety" skill cluster. It was also found that employers of workers in the Cleaner occupation were most intolerant of employee deficits related to the "Instructions" skill cluster.

(3) The employers surveyed in the present study rated skill deficits related to the "Production", "Dependability", and "Attendance" clusters to be most common among new employees, whereas skill deficits related to the "Prevocational" cluster were least common. No significant differences in the relative frequency

of employee deficits in any of the 13 skill clusters were found as a function of occupation.

(4) The employers who responded to the Standards survey generally perceived employee deficits related to the "Affective Response", "Safety", and "Self-Control" skill clusters as being the most serious. In contrast, employee deficits related to the "Organization", "Appearance", and "Adaptibility" skill clusters were generally viewed as the least serious. Only a few differences in the rated seriousness of deficits in the 13 skill clusters were found as a function of occupation. Employers of workers in the Kitchen and Fastfood occupations rated employee deficits related to personal appearance, hygiene and health as significantly more serious than employers of workers in any other occupation. Employers of Fastfood workers viewed deficits in safety skills as less serious than did other employer groups. And employers of Cleaners tended to view employee deficits related to following instructions, rules and schedules more seriously than did other employers.

(5) With respect to employee deficits in the 13 skill clusters examined in the present study, a statistically significant negative relationship was noted between employers' tolerance for skill deficit occurrences and the rated seriousness of such occurrences ($r = -0.38$). Similarly, there was a significant negative relationship between rated seriousness of skill deficit occurrences and their frequency of occurrence ($r = -0.24$) in new employees. No significant relationship was found between employers' tolerance for employee skill deficits and their frequency of occurrence ($r = 0.11$).

(6) The relationship between employers' opinions with respect to the importance of selected vocational and social skills to employment success (Study One) and their opinions with respect to employee deficits in these same skills

(Study Two) was found to be somewhat complex. No significant relationship was found between the relative rankings of the 13 skill clusters based on employers' ratings of their importance to employment success and their relative rankings based on employers' tolerance for employee deficits in these skill clusters (rho = -0.08) or their relative rankings based on employers' ratings of the seriousness of employee deficits in these skill clusters (rho = 0.19). Instead, it was found that employers' ratings of skill cluster importance was negatively related to the frequency with which employees demonstrate deficits in the skill clusters (rho = -0.30).

XI. SUMMARY AND CONCLUSIONS

A. SUMMARY OF THE RESEARCH

In recent years there has been an increasing emphasis among habilitation professionals on community placement of individuals with severe and moderate mental disabilities. Since employment is considered an important facet of successful community integration, this new emphasis has also brought about a corresponding increase in the number of research projects whose primary aim is to develop and demonstrate a vocational habilitation technology capable of ensuring the success of both moderate and severely mentally disabled persons in competitive employment. The exemplary successes of some of these research programs with a few severely disabled clients have resulted in great optimism among habilitation professionals about the ultimate outcome of vocational habilitation. Today, competitive employment is viewed by a majority of habilitation professionals as a feasible goal for the majority of mentally disabled persons.

But such optimism is not completely grounded in reality. Although a few research and demonstration projects have demonstrated the feasibility of competitive employment with a small number of severely disabled individuals, they have achieved these successes through state-of-the-art training technology implemented on the job site by highly trained and motivated staff as well as through intensive on-the-job support and long-term follow-up. The present day reality, especially in Canada, is that the majority of persons with mental disabilities receiving habilitation services do so from under-funded and under-manned agencies that cannot offer such state-of-the-art training and support. Given that this situation appears unlikely to change significantly in the immediate future, the continuing growth in the number of vocational habilitation programs that focus their instruction on the preparation of disabled persons for open employment will result in more and more mentally disabled persons finding themselves in competitive employment with their short-term success hinging solely on the work-related competencies that they were able to acquire in pre-employment training. This state of affairs makes it all the more important that employment preparation programs train those skills that are directly related to work and essential for employment survival in the first few months of open employment.

One especially fruitful approach to developing relevant vocational curricula for mentally disabled persons has been to survey employers to obtain their opinions on which skills and behaviours are most important to employment success. In the last decade numerous researchers have suggested important vocational skills based on surveys of special educators, vocational habilitation professionals or sheltered workshop staff, but only a few relatively recent studies have directly surveyed employers to determine what skills are related to job survival in competitive entry-level employment. Whereas the former group of studies has resulted in lists of skills with questionable relevance to competitive work settings, the results of the latter group of employer surveys have led to relevant prescriptions for employment preparation. However, the generalizability of these employer surveys is limited by the small number of studies completed and the utility of their results has also been somewhat compromised by various methodological flaws. As well, their generalizability to the Canadian situation is limited by the fact that all but one of the employer surveys was carried out in the United States.

The purpose of the two studies reported in this thesis was to correct some of the flaws of previous employer survey studies and extend the knowledge-base acquired from American research to the Canadian situation, specifically Alberta. This was accomplished by obtaining opinions from Alberta employers of workers in entry-level occupations on what vocational and work-related-social skills and worker characteristics are related to success in competitive employment as well as what skill deficits and employee failings are related to failure in competitive employment. Both studies employed the subjective evaluation assessment method to survey employers of workers in eight low-skill occupations commonly available to persons with mental disabilities. In both studies a relatively broad sample of vocational and social behaviours were rated by employers and subsequently organized into a number of skill clusters for analysis.

Study One obtained the opinions of Alberta employers on the importance of a number of work-related skills and behaviours for success in the eight selected entry-level occupations. The Employment Survival Skills Inventory was used to answer the following two primary questions:

(1) What vocational and work-related skills and worker characteristics are believed by employers to be most important for the employment success of workers across the eight targeted occupations generally, as well as within each of the eight targeted occupations individually?

(2) Is there a difference in the rated importance of any skills as a function of whether or not the employer is considering a mentally disabled worker in the job at the time of rating?

In Study Two, a subsample of the same employers who responded to the Study One survey were again surveyed. This second survey focussed on obtaining employers' opinions with respect to the consequences of workers demonstrating deficits in the same skill areas that were initially examined in Study One. Obtaining opinions with respect to skill deficit occurrences is one aspect that was unique to the research carried out for this dissertation. The Employment Survival Skills Standards Survey was used primarily to answer the following questions:

(1) How many occurrences of failures or deficits in individual vocational and work-related social skills would employers permit new employees to demonstrate before terminating their employment? Are there differences in employer tolerances for employee failings in certain skill areas as opposed to others? Are any such differences a function of occupation?

(2) How often do new employees demonstrate deficits in individual vocational and work-related social skills? Are there differences in the frequency of employee deficits in certain skill areas as opposed to others? Are any such differences a function of occupation?

(3) How serious do employers' perceive new employees' deficits in individual vocational and work-related social skills to be? Are there differences in the perceived seriousness of employee deficits in certain skill areas as opposed to others? Are any such differences a function of occupation?

Study Two also attempted to partially validate the results of Study One by asking employers to list the five skills or employee characteristics they believed to be essential for employment success in the occupation they selected for the survey as well as to list the five most common reasons for terminating the employment of workers in that occupation. Lastly, the Standards Survey was also used to obtain some data with respect to the length of formal probation and informal training periods for new employees as well as the average length of job tenure.

A number of aspects of the two studies were either unique or relatively unusual for this area of vocational habilitation research. First, both studies surveyed Canadian employers of workers in various entry-level occupations. Second, in Study One data were collected on the perceived importance of skills for the employment success of both mentally disabled and nondisabled workers. Third, in Study Two employers were asked to carry out multiple ratings on employee skill deficits and failings which directly mirrored the skills that were rated for their importance in Study One. Last, taken together, the two studies collected data on the same 13 skill clusters with respect to four rating dimensions— the relative importance of each skill cluster to employment success as well as the number of skill deficit occurrences permissible prior to terminating the worker, the perceived seriousness of skill deficit occurrences, and the frequency with which skill deficits occur.

B. LIMITATIONS OF THE RESEARCH

The mailed survey method of data collection has a number of drawbacks which must be taken into account in evaluating the results of these two studies. One problem is that response rates can often be quite low without some form of personal contact with the respondents or follow-up of those who do not initially respond. Low response rates can result in misleading data since the researcher has no way of knowing how well the survey respondents actually represent the original survey sample. As well, there is also the possibility that low response rates reflect some sort of hidden bias of the respondents that would affect the researcher's interpretation of the results if it were known.

Another drawback to the survey method of research is that the researcher cannot be certain of how the respondent actually interprets the questions being asked or the items that are to be rated. There is the possibility that a significant number of survey respondents will interpret statements in the questionnaire differently from the researcher's intended meaning. Such misinterpretation can result in misleading data, especially if the researcher cannot spot the misinterpretation from an examination of respondents' responses to the survey items. In the two surveys reported herein, two areas of misinterpretation were possible. The first of these involves the dimensions used to rate the work-related skills presented in the questionnaire. In Study One, employers were asked to rate the importance of behaviours to success in competitive employment. Neither the concepts "important" nor "employment success" were defined for the employers and, therefore, both were open to being misinterpreted. This lack of specificity was more likely to affect interpretation of the "employment success" concept since its usage is not as common as the "importance" concept. For example, when employers talk of success in employment do they simply mean not being fired? Or do they associate success with advancement and pay increases? Or is a worker's success in employment related to how satisfied the employer feels with the worker in general? All of these are equally valid ways of defining success in employment. The potential for misinterpretation was somewhat higher for the rating dimensions— "number of skill deficit occurrences permissible prior to employee termination" and "perceived seriousness of skill deficit occurrence"— in Study Two. The results for these latter two ratings should be viewed with special caution.

The second area of potential misinterpretation involves the actual items or behavioural statements that survey respondents are expected to rate. Again there is the possibility that some respondents will interpret the meaning of a survey item quite differently than the researcher intends. More attention paid to the careful definition of all terminology, as well as more extensive piloting of the research questionnaire might have helped to alleviate this potential problem. However, the former would have added to the length of the questionnaire, and the latter would have greatly added to the length of the dissertation.

The actual number of respondents to the Study One survey resulted in a reasonably large sample size when compared to previous employer surveys, but the poor return rate (11%) for this survey means that the respondents may not be representative of the much larger sample of employers that were included in the original survey mail-out. Although no significant bias in returns was noted with respect to the various industry sectors that were originally sampled, there is a possibility that the employers who elected to complete the survey differ in some significant way from those who received the survey but decided to throw it away. Since all employers who received the survey were aware that the research was related to employment of disabled workers, one possibility is that those employers who elected to respond may be those who felt more positively about mentally disabled workers in the workplace. Because there is no way to be certain of how well the survey respondents represent the original sample selected for the study, generalizations and conclusions based on these data must be viewed with some caution. These cautions must also hold for Study Two because, although the return rate was a more respectable 70%, the original sample for the Study Two survey was simply a subsample of those employers who responded to the Study One survey. Whatever respondent biases may have had an effect on Study One results will also have affected the results of Study Two. The actual sample size of Study Two was also quite a bit smaller than for Study One and this acted to reduce the power of many of the statistical procedures used to analyze the data.

Another problem area for employer surveys that attempt to identify critical employment skills is the possibility that the survey instrument may not provide a valid evaluation of the total domain of employment skills. This is a very real problem, since there are literally thousands of skills and behaviours that could be included within a survey of critical employment skills. But no employer would respond to a questionnaire that included all possible items, so some subset of items must be selected that will broadly represent the entire domain. This problem was diminished in this thesis by drawing items for the survey questionnaires from previous research and by including a greater number of items in the final surveys than most other surveys had.

C. CONCLUSIONS

The two employer surveys carried out for this dissertation generated a large amount of data on employers' opinions and expectations with respect to vocational and work-related social skills for entry-level competitive employment. Data were collected on both the skills critical to success in employment as well as the skill deficits that may lead to job failure. The results and interpretations of the various employer ratings and responses to individual survey questions have already been discussed in some detail in previous sections of this thesis. These will not be again discussed here. Instead, this section will focus on the broad implications of the survey results with respect to four important issues: employer attitudes toward workers with mental disabilities, the skills that will get a worker hired versus those skill deficits that will get an employee fired, generic versus specific job skills training, and what vocational and work-related social skills should be included in pre-employment training programs.

Employer Attitudes Toward Mentally Disabled Workers

Numerous studies over the years have examined employer attitudes toward hiring persons with disabilities (e.g., Dennis, Mueller, & Ebert, 1986; Etter, 1982; Florian, 1978; Fuqua, Rathbun, & Gade, 1984; Gibson & Groeneweg, 1986; Gruenhagen, 1982; Smith, 1981). The results of such studies suggest that in many cases employer attitudes continue to be an inhibiting factor in the employment participation of persons with disabilities (Wilgosh & Skaret, 1987). There continues to be a tendency among employers to focus on job applicants' mental or physical disabilities rather than their job-related abilities. This is especially evident in employers' tendency to expect less of, and less success with, persons who are labelled as having mental disabilities (Schloss & Schloss, 1984). Although many employers may express a willingness to hire someone who is mentally disabled, in practice they find many reasons not to do so (Gibson & Groeneweg, 1986).

Although neither of the surveys carried out in this investigation dealt directly with employer attitudes toward mentally disabled workers, the results of the comparison of importance ratings on skills for mentally disabled versus nondisabled workers do speak to this issue. Basically, it was found in Study One that employers tended to minimize the importance of many work-related skills when they considered a mentally disabled worker to be filling the job. This effect was small but statistically significant and remained relatively constant over all 13 of the skill clusters examined in the study.

Two interpretations of this effect related to employer stereotypes of mentally disabled persons would seem equally valid. The first suggests that employers expect less of a mentally disabled worker and, therefore, tend to downgrade the duties and responsibilities of the job that he or she will be expected to do. Although the job title may remain the same for both the nondisabled and disabled worker, the down-graded version of the job will require fewer high-level skills and a number of skills may actually become somewhat less important to job success. The second interpretation suggests that employers may simply be expressing a willingness to be more tolerant of skill deficits and poor skill performance in mentally disabled workers. Both interpretations suggest that employers continue to focus broadly on disability rather than on specific areas of ability when they consider employing someone with mental disabilities. This tendency in employers points to the need for continued efforts to educate employers to focus on job requirements and then assess workers real abilities to do the job required rather than anticipating problems by focussing on perceived disabilities.

The attack on the low employment participation of mentally disabled persons must be two-pronged. One prong must continue to focus on increasing the number of critical job-related skills that the individual has at the point of entry into the workforce. The second prong must focus on educating employers as to their social responsibilities as well as to the real trade-offs inherent in hiring someone with serious intellectual impairment. That is, employers must be taught to suspend their predjudicial stereotypes long enough to realistically appraise the individual strengths of each job applicant with respect to the job requirements and weigh these against the extent to which applicants' individual disabilities may actually handicap them in performing required job tasks. In many cases such an honest appraisal will reveal that the applicant's disabilities do not actually handicap him or her with respect to carrying out the required duties of the job, or that the applicant's personal strengths (e.g., motivation, stability, honesty, etc.)

will outweigh any handicaps that he or she may have with respect to actual job performance.

Skills to Hire Versus Skill Deficits to Fire

As part of Study Two, employers were asked to list the five skills they believed to be most essential for the job success of new employees as well as the five most common reasons for terminating the employment of new employees. The responses to these two open-ended questions were then categorized into three social competence categories— temperament, character, and social awareness— and three nonsocial competence categories— production, health, and economy— using a classification devised by Greenspan and Shoultz (1981).

A comparison of the necessary job skills and reasons for termination generated by the employers, as categorized into the six competence categories, revealed that skills classified into the character, social awareness, and production categories were most often cited as necessary for job success as well as being most often cited as reasons for terminating new employees. However, the relative ordering of these three competence categories was quite different in the two lists generated by the employers. In decreasing order of frequency, employers cited skills related to the production, social awareness, and character competence categories as being most essential for job success. In contrast, also in decreasing order of frequency, employers cited employee deficits and failings related to the character, social awareness, and production competence categories as common reasons for firing new employees. In short, employers of workers in entry-level jobs would appear to view skills directly related to the quantity and quality of work performance and output as being essential for job success, but they most commonly fire employees for failings related to the moral quality of their behaviour on the job.

These results suggest that for a worker to be hired into an entry-level job it is most important to convince the employer that he or she has the basic production-related skills necessary to do the job (e.g., ability to produce satisfactory work, ability to work quickly and accurately, ability to find work that needs to be done, ability to work with minimum supervision, ability to follow directions, etc.). On the other hand, once the worker is in the job, it is more important for the worker to demonstrate qualities such as a responsible attitude, good work attendance, dependability on the job, and honesty. This is not to say that once in the job the worker can stop producing but rather, that an irresponsible attitude or dishonesty will get an employee fired far more quickly than being a slow producer. Certainly some of the other data collected in Study Two supports the contention that production skill deficits are quite common in new workers and are also relatively well tolerated by employers.

Generic Skills Versus Specific Job Skills Training

In previous surveys of employers in competitive work settings, data have most commonly been collapsed across different types of entry-level jobs. This type of analysis implicitly assumes that the skills being examined are basic to all entry-level jobs and that their importance to job performance does not vary significantly from one job to another. However, it is quite possible that different jobs may call for distinctly different skill profiles (Salzberg, Agran, & Lignugaris/Kraft, 1986). The specific demands and responsibilities of each employment situation may dictate that employment preparation programs adjust their training priorities in relation to the specific job that an individual is being trained for (Burton, Chavez, & Kokaska, 1987).

The question of whether entry-level jobs are more alike than different has not yet been fully resolved. Only a very few studies (e.g., Burton, Chavez, & Kokaska, 1987; Salzberg, Agran, Lignugaris/Kraft, 1986) have reported data separately for different occupations and these have found both great similarity between different entry-level jobs as well as a few differences. For example, Burton et al. (1987) reported that for most jobs, employers expect workers to possess basic academic skills, to move quickly, to be physically coordinated, and to display proper grooming. But being able to move quickly and displaying good grooming were found to be significantly more important in the food services occupations. Whereas, basic academic skills were more important in the Stock/Construction occupations. In a similar vein, Salzberg, et al. (1986) reported a core of skills consistently important across all entry-level jobs, but also noted that importance ratings for personal-social behaviours were significantly higher for food service workers and kitchen helpers.

The results from the two employer surveys carried out in this investigation were similar to previous research in that more similarities than differences were noted between the eight entry-level occupations that were examined. Significant differences between some occupations were noted for the "Appearance" and "Safety" skill clusters with respect to rated importance to employment success, number of skill deficit occurrences permissible prior to employee termination, and rated seriousness of skill deficit occurrences. Similarly, significant differences between some occupations were also noted for the "Instructions" skill cluster with respect to number of skill deficits permissible and rated seriousness of skill deficit occurrence. Otherwise no significant differences were found between occupations.

The data from the present investigation point to a core set of basic work-related skills and behaviours that appear to be generic for the entry-level occupations that were surveyed. These results would appear to be congruent with Rusch and Mithaug's (1980) contention that "while specific entry level expectations may vary from shop to shop, or job to job, there is sufficient agreement on the categories of important behaviors to generate a common listing of critical survival skills" (p. 104). This core of skills could provide the basis for a generically-applicable employment preparation curriculum for mentally disabled individuals. Of course, the few differences between the skill profiles of the eight occupations cannot be simply ignored in the light of the many commonalities that are evident. In the generic program some extra emphasis should be placed on any skills that are uniquely important to success for whatever occupation the individual client is being trained to enter.

The importance of pre-employment generic skills training should not be belittled even in the light of the recent successes being reported by programs that train disabled workers on-the-job (e.g., Moss, Dineen, & Ford, 1986; Vargo, Dennis, Blevins, & Ebert, 1987; Wehman, 1986). Although it certainly is true that the older approach to vocational habilitation in which individuals were trained in industrially-modelled facilities until they were "job ready" and then simply "placed" into competitive jobs has not met with great success (Bellamy, Rhodes, & Albin, 1986; Rhodes, 1986), newer approaches in which all training activities occur on-the-job also have serious drawbacks (Lam, 1987). The two major problems with the older approach were that many individuals would never reach the criterion of being "job ready" and for those who did, employment success was often hampered by the fact that many of the generic skills learned in industrially-modelled facilities would not transfer to the competitive workplace (Bellamy, Sowers, & Bourbeau, 1983). More recent training models avoid both the issues of job readiness and lack of skill transfer by carrying out all training within the actual workplace. But these newer supported work programs are more labour intensive and more expensive to operate and, although such programs have demonstrated some success with a small number of severely disabled workers, it is not entirely certain that all disabled persons would be able to benefit from on-the-job training without some prior training in pre-employment skills. Without some prior training in core work skills, many persons with severe mental disabilities would not be accepted in the competitive workplace even for training under extensive supervision. These core skills are the ones that should be included in senior high school and transitional training programs. The purpose of generic skills training should not be to make the person "job ready" but rather, it should be focussed on making the person ready to learn a job.

What Skills Should be Included in Employment Preparation Curricula?

Rusch (1979) suggested that employment preparation programs should focus their efforts on training a variety of vocational skills that have immediate and long-term benefits for the trainee; namely, survival skills. These skills "...are those behaviours that relate directly to job performance which a trainee must acquire to complete assigned duties successfully" (Rusch & Mithaug, 1980, p.113). As discussed previously, one method of determining what these skills are for a given job is to ask employers of workers in the job to list those skills that relate directly to competent job performance and which are required for job maintenance. This is exactly what was attempted in this thesis.

In Study One of the present investigation, a sample of Alberta employers was asked to rate a set of skills for their importance to employment success in eight entry-level occupations. Later, in Study Two, a subsample of these same employers were asked to rate occurrences of employee deficit in substantially the same skills that were rated for their importance in Study One. In this second study, employers were asked to specify the number of deficit occurrences permissible for each skill before they fire the employee, as well as to rate the relative seriousness of such deficits and the relative frequency with which they occur in new employees. The results of these four ratings suggest that no single rating dimension is sufficient to determine the relevance of a skill to successful employment.

It was expected that there would be a relatively straight-forward relationship between employers' judgements of what skills were important for job success and employers' perception of the relative seriousness of employee deficits in those same skills as well as their tolerance for such deficits. It was expected that employee deficits in the most important skills would be viewed as serious and would not be tolerated by employers. It was also assumed that skill deficits that were viewed by employers as serious and which were not well tolerated would also tend to occur relatively infrequently. Otherwise few new employees would survive in the job to become experienced employees. In short, it was anticipated that rated importance of skills would correlate positively with the rated seriousness of skill deficits and negatively with both the number of skill deficits permissible and the rated frequency of their occurrence.

To some extent the results of the two surveys carried out in this investigation matched these expectations, but there was enough variation from expected patterns of interrelationship to indicate that employers' judgements of the vocational competence of their employees are quite complex. Although all of the relationships between the four dimensions trended in the right direction, correlations were smaller than expected and a few were statistically nonsignificant. Most of the deviation from the expected pattern was related to the importance dimension. The rated importance of skills was not most strongly related to employers' intolerance for skill deficits or their perception of the seriousness of skill deficits as might be expected. Rather, the rated importance of skills was most strongly related to the frequency with which skill deficits occur in new employees. It would seem that skill deficits occur less frequently in those skills rated as more important by employers.

With respect to the question of how to prioritize the 13 skill clusters for inclusion in an employment preparation program, it is suggested that such a program should give priority to training those vocational and work-related social skills and behaviours that are rated as most important to employment success and wherein employee deficits are least tolerated, perceived as most serious, and occur most frequently. Based on this suggestion, the mean rank ordering of the 13 skill clusters across the four employer ratings would seem to offer the best estimate of each cluster's overall importance to success in the workplace. Table 34 (following page) lists the 13 skill clusters and presents their rankings on each of the four employer ratings as well as each skill cluster's mean rank across ratings. As may be seen from this table, skills in the "Safety" cluster would appear to be the most critical to train, followed by skills related to "Attendance", "Affective Response", and so on. The skills that would appear to be the least critical to employment success are included within the "Adaptability" skill cluster.

TABLE 34.

Relative Ranking of Skill Clusters by Each of Four Ratings and Mean Rank Over Different Ratings

Skill Clusters	Importance	Permissible	Seriousness	Frequency	Mean Rank
Safety	1.0	2.0	2.0	8.5	3.38
Attendance	2.0	6.0	7.0	3.0	4.50
Dependability	3.0	10.0	10.0	2.0	6.25
Appearance	4.0	8.0	12.0	10.0	8.50
Work Attitude	5.0	9.0	9.0	5.0	7.00
Instructions	6.0	7.0	4.5	7.0	6.13
Self-Control	7.0	5.0	3.0	12.0	6.75
Production	8.0	11.5	4.5	1.0	6.25
Affective Response	9.0	3.0	1.0	11.0	6.00
Social	10.0	4.0	6.0	8.5	7.13
Adaptability	11.0	13.0	13.0	6.0	10.75
Organize	12.0	11.5	11.0	4.0	9.63
Prevocational	13.0	1.0	8.0	13.0	8.75

NOTE: Lower rank indicates more important, less permissible, more serious, and more frequent.

The skill groupings evaluated by employers could form the basis of a generic curriculum for entry-level employment that might be utilized in high school vocational special needs classes or in facility-based transitional training programs within habilitation settings. For example, the skills found to be critical for employment success in the present investigation could be developed into an updated and socially valid vocational training curriculum along similar lines to the Industrial Model Vocational Training Systems (Ebert & Crocker, 1978) currently in use at Western Industrial Research and Training Centres in Edmonton. However, although the present investigation has given some indication of what basic skills and behaviours should be included in employment preparation curricula, further development is yet required.

As presently stated, the individual skills and behaviours that underlie the 13 skill clusters are described so generally that they are of questionable use to the teacher or vocational trainer. These generalized skill descriptions will need to be broken into subskills that are more succinctly stated and clearly defined. For example, the item "Demonstrates appropriate grooming and personal hygiene" which is included in the "Appearance" skill cluster could be broken into the following subskills: (1) keeps beard tidy or remains clean shaven, (2) keeps hair neatly cut and combed, (2) washes hands when necessary, especially after using toilet or prior to handling foodstuffs, (3) drys hands after washing, (4) keeps fingernails clean and properly manicured, (5) keeps body clean and free of objectional odor, (6) uses deodorant as necessary, etc.

D. RECOMMENDATIONS FOR FURTHER STUDY

The investigation reported herein applied the method of subjective evaluation with Alberta employers of workers in entry-level occupations to determine what skills are critical for employment survival. It was hoped that the two surveys would result in practical information that could be applied to form the basis of a functional and content valid employment preparation curriculum. To some extent this has been achieved. However, the results of this investigation are far from conclusive. Although this investigation improved on the methodology of much of the previous research and did obtain data directly relevant to the Canadian context, other methodological weaknesses— many inherent in the survey method itself— placed limits on the interpretability and generalizability of the results. Further studies of factors that relate to employment success will need to be conducted using both subjective evaluation procedures as well as comparative evaluation procedures (see Rusch, 1983b; White, 1986; White & Rusch, 1983).

Further development and validation of the general skills and behaviours evaluated in the present investigation will also be required before they can be applied in training of mentally disabled persons for competitive entry-level employment. First, before a functional curriculum can be developed the most critical skills for employment success in each of the 13 skill clusters must be determined and those skills in any given cluster that were not viewed as critical should be deleted. Second, since the skill statements included in this investigation were relatively broad, each of the remaining "critical" skills will need to be broken into a number of specific behavioural objectives that can be individually observed, trained, and evaluated. These behavioural objectives will need to not only clearly describe the content of the required behaviour but also its context and level of mastery performance. Finally, these individual behavioural objectives will need to be validated in the workplace by means of comparative evaluation procedures wherein "good" and "poor" employees are actually observed while working and their performance with respect to the various behavioural objectives of the curriculum are evaluated and directly compared.

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APPENDIX A.

Employment Survival Skills Inventory, Forms A1/A2 & B1/B2

EMPLOYMENT SURVIVAL SKILLS INVENTORY©
1986-A1

Western Industrial Research & Training Centre

The purpose of this inventory is to obtain information about the skills, behaviors, and attitudes that are most important for the AVERAGE PERSON to demonstrate on-the-job, if he/she is to survive in competitive employment.

Printed below are EIGHT job titles and descriptions taken from the Canadian Classification and Dictionary of Occupations. Please choose ANY ONE, but ONLY ONE, job title in which your firm currently employs individuals and place a check-mark in the box provided. Should your firm hire persons into more than one of these occupations, please choose the one with which you are most familiar.

( ) Kitchen Helper
( ) Laundry Labourer
( ) Materials Handler, General
( ) General Labourer, Assembly
( ) Office Boy/Girl
( ) Cleaner, Commercial & Industrial
( ) Counterman, Fastfood & Cafeteria
( ) Construction/Tradesmans Helper

(NOTE: for detailed job descriptions for these occupational titles refer to the back of this survey form.)

If your firm DOES NOT employ persons in any of these jobs, please check this box ( ), answer the questions on PAGE 3 and return the Employment Survival Skills Inventory in the postage-paid return envelope provided.

Printed on the following pages are 54 statements, each describing a skill, behavior, or attitude that may be relevant to success in the occupation that you selected above. Please read each statement carefully and circle the number on the 5-point scale to its right that most closely represents its importance to employment success for the AVERAGE PERSON in the occupation that you selected.

EXAMPLE:

	No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential		No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
1. Able to blink left eye and clap hands simultaneously.	[✓ 1]	2	3	4	5	3. Able to lift 30 kg.	1	2	3	[✓ 4]	5
2. Says polite things about other people.	1	[✓ 2]	3	4	5	4. Understands the value of money.	1	[✓ 2]	3	4	5

(Turn page and begin survey.)

EMPLOYMENT SURVIVAL SKILLS INVENTORY©
1986-A2

Western Industrial Research & Training Centre

The purpose of this inventory is to obtain information about the skills, behaviors, and attitudes that are most important for a MENTALLY DISABLED PERSON to demonstrate on-the-job, if he/she is to survive in competitive employment.

Printed below are EIGHT job titles and descriptions taken from the Canadian Classification and Dictionary of Occupations. Please choose ANY ONE, but,ONLY ONE, job title in which your firm currently employs individuals and place a check-mark in the box provided. Should your firm hire persons into more than one of these occupations, please choose the one with which you are most familiar.

( ) Kitchen Helper
( ) Laundry Labourer
( ) Materials Handler, General
( ) General Labourer, Assembly
( ) Office Boy/Girl
( ) Cleaner, Commercial & Industrial
( ) Counterman, Fastfood & Cafeteria
( ) Construction/Tradesmans Helper

(NOTE: for detailed job descriptions for these occupational titles refer to the back of this survey form.)

If your firm DOES NOT employ persons in any of these jobs, please check this box ( ), answer the questions on PAGE 3 and return the Employment Survival Skills Inventory in the postage-paid return envelope provided.

Printed on the following pages are 54 statements, each describing a skill, behavior, or attitude that may be relevant to success in the occupation that you selected above. Please read each statement carefully and circle the number on the 5-point scale to its right that most closely represents its importance to employment success for a MENTALLY DISABLED PERSON in the occupation that you selected.

EXAMPLE:

		No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
1	Able to blink left eye and clap hands simultaneously	[✓ 1]	2	3	4	5
2	Says polite things about other people.	1	[✓ 2]	3	4	5
3.	Able to lift 30 kg.	1	2	3	[✓ 4]	5
4.	Understands the value of money.	1	[✓ 2]	3	4	5

(Turn page and begin survey.)

	No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
1. Demonstrates positive attitude & works cheerfully.	1	2	3	4	5
2. Does NOT try to avoid work or cut corners.	1	2	3	4	5
3. Willing to do more than the minimum required.	1	2	3	4	5
4. Takes care of equipment & leaves workplace neat.	1	2	3	4	5
5. Able to keep own supplies in order	1	2	3	4	5
6. Able to manage time & materials efficiently.	1	2	3	4	5
7. Secures necessary work materials & keeps supplied with materials as job progresses.	1	2	3	4	5
8. Completes work even if it is boring.	1	2	3	4	5
9. Does NOT leave work for others to do.	1	2	3	4	5
10. Helps co-workers when asked to do so.	1	2	3	4	5
11. Able to get along well with co-workers and supervisors.	1	2	3	4	5
12. Does NOT bother or pester others in the workplace	1	2	3	4	5
13. Does NOT steal from co-workers or employer	1	2	3	4	5
14. Behaves appropriately with co-workers of opposite sex.	1	2	3	4	5
15. Able to work without interrupting others.	1	2	3	4	5
16. Does NOT have to be reminded to begin work.	1	2	3	4	5
17. Able to reach place of work by own arrangement.	1	2	3	4	5
18. Punches time card correctly.	1	2	3	4	5
19. Is dependable.	1	2	3	4	5
20. Able to work continuously without leaving work station inappropriately.	1	2	3	4	5
21. Does NOT take extra breaks during work.	1	2	3	4	5
22. Remains at work station as required.	1	2	3	4	5
23. Shows ability to organize the work of others.	1	2	3	4	5
24. Follows area work schedules.	1	2	3	4	5
25. Knows what an employer expects.	1	2	3	4	5
26. Able to keep good & complete records.	1	2	3	4	5
27. Works hard even when no one is watching.	1	2	3	4	5

	No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
28. Responds to instructions WITHOUT work disruptive results.	1	2	3	4	5
29. Makes required corrections WITHOUT complaining.	1	2	3	4	5
30. Able to learn new job tasks by watching others perform task.	1	2	3	4	5
31. Able to learn new job tasks by verbal instructions.	1	2	3	4	5
32. Able to respond to criticism WITHOUT work disruptive results.	1	2	3	4	5
33. Does NOT remain angry or upset all day	1	2	3	4	5
34. Does NOT complain about what he or she has to do.	1	2	3	4	5
35. Works WITHOUT displaying or engaging in disruptive behaviors.	1	2	3	4	5
36. Able to work WITHOUT frequent supervision.	1	2	3	4	5
37. Seeks necessary supervision or assistance.	1	2	3	4	5
38. Initiates contact with supervisor when cannot do task required, runs out of necessary materials, or makes mistake.	1	2	3	4	5
39. Demonstrates safe work habits and behavior.	1	2	3	4	5
40. Follows safety rules and procedures	1	2	3	4	5
41. Stays awake at work station	1	2	3	4	5
42. Demonstrates job flexibility	1	2	3	4	5
43. Able to make changes to avoid further mistakes.	1	2	3	4	5
44. Completes previously learned repetitive tasks within normal limits.	1	2	3	4	5
45. Demonstrates adequate CONSISTENCY of production.	1	2	3	4	5
46. Has basic arithmetic skills.	1	2	3	4	5
47. Able to tell time from a watch or clock.	1	2	3	4	5
48. Able to communicate basic needs such as thirst, hunger, sickness & toileting necessities.	1	2	3	4	5
49. Demonstrates appropriate grooming & personal hygiene.	1	2	3	4	5
50. Maintains good personal health.	1	2	3	4	5
51. Able to work WITHOUT initiating UNNECESSARY contact with public.	1	2	3	4	5
52. Able to work WITHOUT initiating UNNECESSARY contact with supervisor or co-workers.	1	2	3	4	5
53. Often says nice things about others	1	2	3	4	5
54. Is punctual.	1	2	3	4	5

EMPLOYMENT SURVIVAL SKILLS INVENTORY©
1986-B1

Western Industrial Research & Training Centre

The purpose of this inventory is to obtain information about the skills, behaviors, and attitudes that are most important for the AVERAGE PERSON to demonstrate on-the-job, if he/she is to survive in competitive employment.

Printed below are EIGHT job titles and descriptions taken from the Canadian Classification and Dictionary of Occupations. Please choose ANY ONE, but ONLY ONE, job title in which your firm currently employs individuals and place a check-mark in the box provided. Should your firm hire persons into more than one of these occupations, please choose the one with which you are most familiar.

( ) Kitchen Helper
( ) Laundry Labourer
( ) Materials Handler, General
( ) General Labourer, Assembly
( ) Office Boy/Girl
( ) Cleaner, Commercial & Industrial
( ) Counterman, Fastfood & Cafeteria
( ) Construction/Tradesmans Helper

(NOTE: for detailed job descriptions for these occupational titles refer to the back of this survey form.)

If your firm DOES NOT employ persons in any of these jobs, please check this box ( ), answer the questions on PAGE 3 and return the Employment Survival Skills Inventory in the postage-paid return envelope provided.

Printed on the following pages are 54 statements, each describing a skill, behavior, or attitude that may be relevant to success in the occupation that you selected above. Please read each statement carefully and circle the number on the 5-point scale to its right that most closely represents its importance to employment success for the AVERAGE PERSON in the occupation that you selected.

EXAMPLE:

		No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
1	Able to blink left eye and clap hands simultaneously	[✓ 1]	2	3	4	5
2	Says polite things about other people.	1	[✓ 2]	3	4	5
3	Able to lift 30 kg.	1	2	3	[✓ 4]	5
4	Understands the value of money.	1	[✓ 2]	3	4	5

(Turn page and begin survey.)

EMPLOYMENT SURVIVAL SKILLS INVENTORY©
1986-B2

Western Industrial Research & Training Centre

The purpose of this inventory is to obtain information about the skills, behaviors, and attitudes that are most important for a MENTALLY DISABLED PERSON to demonstrate on-the-job, if he/she is to survive in competitive employment.

Printed below are EIGHT job titles and descriptions taken from the Canadian Classification and Dictionary of Occupations. Please choose ANY ONE, but ONLY ONE, job title in which your firm currently employs individuals and place a check-mark in the box provided. Should your firm hire persons into more than one of these occupations, please choose the one with which you are most familiar.

- ☐ Kitchen Helper
- ☐ Laundry Labourer
- ☐ Materials Handler, General
- ☐ General Labourer, Assembly
- ☐ Office Boy/Girl
- ☐ Cleaner, Commercial & Industrial
- ☐ Counterman, Fastfood & Cafeteria
- ☐ Construction/Tradesmans Helper

(NOTE: for detailed job descriptions for these occupational titles refer to the back of this survey form.)

If your firm DOES NOT employ persons in any of these jobs, please check this box ( ), answer the questions on PAGE 3 and return the Employment Survival Skills Inventory in the postage-paid return envelope provided.

Printed on the following pages are 54 statements, each describing a skill, behavior, or attitude that may be relevant to success in the occupation that you selected above. Please read each statement carefully and circle the number on the 5-point scale to its right that most closely represents its importance to employment success for a MENTALLY DISABLED PERSON in the occupation that you selected.

EXAMPLE:

	No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential		No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
1. Able to blink left eye and clap hands simultaneously.	[✓ 1]	2	3	4	5	3. Able to lift 30 kg.	1	2	3	[✓ 4]	5
2. Says polite things about other people.	1	[✓ 2]	3	4	5	4. Understands the value of money.	1	[✓ 2]	3	4	5

(Turn page and begin survey.)

		No Importance	Minor Importance	Moderate Importance	Major Importance	Absolutely Essential
1	Works faster to finish a job when required.	1	2	3	4	5
2	Demonstrates pride in the work he or she does.	1	2	3	4	5
3	Demonstrates loyalty to employer.	1	2	3	4	5
4	Able to keep good & complete records.	1	2	3	4	5
5	Able to use information, materials, & equipment properly.	1	2	3	4	5
6	Sets up own work station correctly.	1	2	3	4	5
7	Cleans own work station & participates in area clean-up.	1	2	3	4	5
8	Completes work on time.	1	2	3	4	5
9	Reliably completes all assigned tasks.	1	2	3	4	5
10	Works well in a group.	1	2	3	4	5
11	Often says nice things about other people.	1	2	3	4	5
12	Speaks cheerfully with co-workers & the public.	1	2	3	4	5
13	Does NOT verbally abuse or insult co-workers.	1	2	3	4	5
14	Practices courtesy in all on-the-job situations & speaks respectfully to co-workers & supervisors.	1	2	3	4	5
15	Joins co-workers for breaks.	1	2	3	4	5
16	Avoids socially unacceptable language in the workplace.	1	2	3	4	5
17	Takes care NOT to damage other people's property while working.	1	2	3	4	5
18	Is punctual.	1	2	3	4	5
19	Demonstrates good attendance at work.	1	2	3	4	5
20	Returns from breaks on time.	1	2	3	4	5
21	Able to participate in work environment for a full work-day.	1	2	3	4	5
22	Does NOT request or take time off from work without good cause.	1	2	3	4	5
23	Notifies supervisor of intended absence from work or when necessary to leave work station.	1	2	3	4	5
24	Able to follow a daily work schedule.	1	2	3	4	5
25	Able to make basic job decisions on own.	1	2	3	4	5
26	Able to tell time from a watch or clock.	1	2	3	4	5
27	Does NOT take extra breaks during work.	1	2	3	4	5
28	Demonstrates initiative & imagination on the job.	1	2	3	4	5
29	Follows rules.	1	2	3	4	5
30	Follows instructions.	1	2	3	4	5
31	Able to follow instructions with minimal demonstration.	1	2	3	4	5
32	Is accepting of new training.	1	2	3	4	5
33	Able to learn new job tasks to proficiency with only a few hours of instruction.	1	2	3	4	5
34	Remembers to respond to instructions that require compliance after a specified time period.	1	2	3	4	5
35	Able to stay calm under pressure.	1	2	3	4	5
36	Remains in control of own anger & frustration.	1	2	3	4	5
37	Able to work under tension & pressure.	1	2	3	4	5
38	Accepts responsibility for own work performance.	1	2	3	4	5
39	Works hard even when no one is watching.	1	2	3	4	5
40	Initiates contact with co-worker when needing help with a task.	1	2	3	4	5
41	Pays attention in dangerous work areas.	1	2	3	4	5
42	Responds appropriately to verbal safety signals.	1	2	3	4	5
43	Remains attentive to task.	1	2	3	4	5
44	Works hard to reach new work goals.	1	2	3	4	5
45	Able to adapt to new work routines with a minimum of supervisory contacts.	1	2	3	4	5
46	Demonstrates adequate RATE & QUALITY of production.	1	2	3	4	5
47	Demonstrates adequate economy of time/motion on the job.	1	2	3	4	5
48	Able to recite personal information such as: name, telephone number, & address upon request.	1	2	3	4	5
49	Demonstrates basic skills in reading & spoken language.	1	2	3	4	5
50	Dresses appropriately for work.	1	2	3	4	5
51	Washes hands after using the lavatory.	1	2	3	4	5
52	Able to continue working WITHOUT disruptions when supervisor or co-workers are observing.	1	2	3	4	5
53	Helps co-workers when asked.	1	2	3	4	5
54	Stays awake at work station.	1	2	3	4	5

PLEASE ANSWER THE FOLLOWING QUESTIONS. Remember, your responses will be held strictly confidential.

1. Your sex: ( ) male ( ) female

2. Your age: ________ (in years)

3. Your highest level of education attained?
   - ( ) elementary school
   - ( ) secondary school
   - ( ) community College
   - ( ) university undergraduate
   - ( ) university graduate

   Total years of education? ____________

4. Your job title or position in firm: ________________________________

5. Do you directly supervise workers? ( ) no ( ) yes

6. Number of years you have held your present position: ____________

7. Name of your firm: ________________________________

8. Type of business or industry:
   - ( ) agriculture/forestry
   - ( ) mines, quarries, oil
   - ( ) manufacturing, packaging
   - ( ) construction, building trades
   - ( ) transportation, communications, utilities
   - ( ) wholesale, retail trade
   - ( ) finance, insurance, real estate
   - ( ) community, business & personal service
   - ( ) public administration

   other: (specify) ________________________________

9. Total number of employees in your firm: __________

10. Any physically handicapped employees in your firm? ( ) no ( ) yes

11. Any mentally handicapped employees in your firm? ( ) no ( ) yes

12. Is your firm unionized? ( ) no ( ) yes

Thank you for your time and help. If you wish to receive a short report of results upon completion of our research, please PRINT your name and mailing address in this space or attach your business card:

____
____
____
____
________________________________ POSTAL CODE: ____________

The following are descriptions of the eight occupations listed on the first page of this inventory. These descriptions are general occupational descriptions taken from the Canadian Classification and Dictionary of Occupations and are to be used to help you decide whether or not your firm hires persons into one or more of the eight occupations listed.

KITCHEN HELPER: Helps to maintain kitchen work areas and restaurant equipment and utensils in clean and orderly condition. May perform various duties such as: Washes floors, walls, worktables, appliances, and cutting blocks. Removes trash and garbage. Washes pots, pans and trays by hand. Scrapes food from dishes and stacks them for dishwasher. May sometimes operate dishwasher. Transfers supplies and equipment between storage and work areas. May wash and peel fruit and vegetables.

LAUNDRY LABOURER: Prepares laundry for processing and distributes laundry to marking and classification stations. May perform various duties such as: Weighing and sorting, attaching identification tags, moistening clean wash preparatory to ironing, and loading and unloading washing machines and extractors, stacking linen supplies on storage room shelves. May unload soiled linen from trucks and load clean laundry.

MATERIAL HANDLER, GENERAL: Loads, unloads, conveys, stores, and distributes materials and objects within plant, store, warehouse, or other establishments, performing various duties such as: Places and removes materials onto or from trucks, pallets, shelves, conveyors, furnaces, and machines. Opens containers. Transports materials from one area to another either manually or mechanically. Installs strapping, bracing, or padding to prevent damage of materials or equipment in transit. Removes, labels, and identifies materials. Counts and weighs materials. May operate mechanical devices such as conveyors, industrial forklifts and trucks to convey materials from one area to another. May assist in routine maintenance of equipment.

GENERAL LABOURER, ASSEMBLY: Assembles small mechanical, electrical, or other types of products by performing various duties such as: Positions parts in specified relationship to each other. Fastens parts together using hand or powered tools. Uses previously set-up machines, such as arbor presses, punch presses, taps, spot welding machines or riveting machines to fasten, force fit, or trim excess material on assembly line. Examines components, using fixed gauges or test devices. Tests effectiveness of mechanisms, using a variety of simple tests. May be assigned to various work stations according to production requirements or to reduce fatigue factors. May specialize in the assembly of a certain part.

OFFICE BOY/GIRL: Performs any combination of the following duties in government office or business office of a commercial or industrial establishment: Furnishes staff with clerical supplies, sorts incoming mail for distribution and dispatches outgoing mail, distributes office paperwork and memos between departments. May also operate office machines such as duplicating or shredding machines.

CLEANER, COMMERCIAL & INDUSTRIAL: Keeps hotel, office buildings, apartment buildings, and industrial establishments in clean and orderly condition by performing various duties such as: Tends furnace and boiler. Cleans hallways, stairways, and office floors. Cleans alleys, aisles, or work areas around machines. Uses both power and hand cleaning equipment. Cleans dust and dirt from office and shop equipment. Washes windows. Vacuums carpets and polishes furniture. Polishes metal fixtures and fittings. Keeps lavatories clean and tidy, and replenishes expendable supplies. Empties waste baskets and trash bins. May mow lawns, trim shrubbery and maintain sidewalks and walkways. May arrange boxes, material, and handtrucks or other industrial equipment in neat and orderly manner. May carry out routine maintenance work; such as, painting, minor electrical repairs, carpentry, and plumbing. Frequently works in evenings after daytime employees have left premises.

COUNTERMAN, FASTFOOD & CAFETERIA: Serves food to customers from behind counter. Calls customer orders to kitchen staff. Picks up and serves order when ready. Accepts payment or may make up itemized check for service. Performs other duties, such as cleaning counters, tables, restaurant floors, taking out trash, replenishing condiments and expendable supplies such as straws, napkins, stir-sticks. May also wash dishes or sell cigars and cigarettes. May prepare sandwiches, salads, beverages and other short order items.

CONSTRUCTION/TRADESMAN HELPER: Helps skilled craft workers engaged in constructing or repairing buildings, roads, bridges, sewer and water facilities and other construction projects by performing various routine and essentially manual duties such as: Conveying and holding tools, using hand or small power tools in a helping capacity, transporting materials, tools and supplies to and from and about the worksite, mixing materials, and carrying out clean-up tasks.

APPENDIX B.

Study One Covering Letter Signed by Chairman of WIRTC Board

wirtc

WESTERN INDUSTRIAL, RESEARCH AND TRAINING CENTRE
13325 ST. ALBERT TRAIL, EDMONTON, ALBERTA, CANADA T5L 4R3 PH. (403) 454-965[illegible]

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MR. SPENCER MONTGOMERY
President
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[illegible]

[illegible]

Dear Colleague:

A cultural norm and value of Canadian society is that people work for a living. This holds as true for persons with disabilities as for those without. Persons with disabilities also want to work, to be personally independent, and to contribute to society.

This vast reservoir of highly motivated workers has been successfully introduced into the provincial workforce through the efforts and cooperation of vocational training centres and employers throughout Alberta. Given job-specific training and the opportunity to work, many persons with disabilities have become valued employees of Alberta companies.

We are now asking Alberta employers to take a few minutes to help make our vocational training program even more relevant. The attached survey forms the foundation for a major research project that will have a significant impact on the future direction of vocational training activities. By telling us what basic skills and attitudes are most important to success in lower-skill jobs, we will be better able to tailor training to meet your workforce needs.

It will, however, require a high response rate from employers to assure validity. So, please take the few minutes required to help secure a productive future for many Canadians while increasing the human resources available to your company. Our survey staff will be pleased to accept telephone calls (call collect "Employment Survival Study" (403) 454-9656) if you or your staff should require any assistance in completing the survey.

I would personally like to thank you for your support of this critical project.

Sincerely yours,

Bruce McWhorter
Chairman of the Board

APPENDIX C.

Study One Covering Letter Signed by Researcher

TO THE SURVEY RESPONDENT: A Few Words Before You Begin

This short questionnaire is part of a major research effort to update available information on basic vocational and social skills vital to employment success in selected unskilled and semi-skilled occupations. As a person who directly supervises workers, your knowledge of the factors important to job success is invaluable. Although completing the questionnaire will only require approximately 15 minutes, the information gained will help us to better prepare vocationally handicapped persons to enter the workforce.

The information you provide will be held strictly confidential. It will only been seen by those persons directly involved with processing and computerizing the survey data. No one in your firm or at WIRTC who is not associated with computerizing the survey data will have access to your responses, nor will they ever receive any information supplied by individual respondents. All research reports will be on grouped data only.

Please read the survey instructions carefully before responding to any survey items. It is also important that you answer all the information items on page 3 of the survey. When you have completed the questionnaire, please seal it in the postage-paid, return envelope provided and mail it at your earliest convenience.

Thank you for your time and cooperation.

Sincerely,

Horst H. Mueller, M.A.
Research Associate

APPENDIX D.

Employment Survival Skills Rating Scale

Employment Survival Skills Rating Scale

INSTRUCTIONS

We wish to know what behaviors, skills, and attitudes you believe must be demonstrated by a person with mental disabilities if he or she is to succeed in employment. Listed on the following pages are 135 statements, each describing a behavior, skill, or attitude with some relevance to the workplace. Please, read each statement carefully and then, by circling the appropriate number on the 7-point scale provided to the right, rate the importance of the behavior, skill, or attitude to success in competitive employment in an entry-level job. Entry-level jobs are basic unskilled or semi-skilled jobs such as: janitorial, kitchen helper, commercial housekeeping, table busing, warehouse laborer, basic clerical/filing, basic keypunching, etc. Your ratings may go from: 1: not at all important, to 7: absolutely essential.

EXAMPLE:

not important ↳ 1 2 3 4 5 6 7 ↲ absolutely essential

1. Able to blink eyes and clap hands simultaneously. [✓ 1] 2 3 4 5 6 7

2. Able to lift up to 30kg. 1 2 3 4 [✓ 5] 6 7

not important → 1 2 3 4 5 6 7 ← absolutely essential

1. Able to develop new skills to get promoted. 1 2 3 4 5 6 7

2. Able to help others work together. 1 2 3 4 5 6 7

3. Able to make changes to avoid mistakes. 1 2 3 4 5 6 7

4. Able to check own work to be sure it's right. 1 2 3 4 5 6 7

5. Works cheerfully. 1 2 3 4 5 6 7

6. Takes care of equipment and leaves workplace neat. 1 2 3 4 5 6 7

7. Completes work even if it is boring. 1 2 3 4 5 6 7

8. Completes work on time. 1 2 3 4 5 6 7

9. Able to plan own work for the day. 1 2 3 4 5 6 7

10. Does not leave work for others to do. 1 2 3 4 5 6 7

11. Helps others when needed. 1 2 3 4 5 6 7

12. Does not have to be reminded to begin work. 1 2 3 4 5 6 7

13. Able to look at both sides of a proble[illegible] 1 2 3 4 5 6 7

14. Able to follow a daily schedule. 1 2 3 4 5 6 7

15. Able to work faster to finish work when required. 1 2 3 4 5 6 7

16. Does not avoid work. 1 2 3 4 5 6 7

not important → 1 2 3 4 5 6 7 ← absolutely essential

17. Able to set own work goals. 1 2 3 4 5 6 7

18. Able to plan work to fit time available. 1 2 3 4 5 6 7

19. Able to avoid errors. 1 2 3 4 5 6 7

20. Follows rules. 1 2 3 4 5 6 7

21. Pays attention to unsafe work areas. 1 2 3 4 5 6 7

22. Able to stay calm. 1 2 3 4 5 6 7

23. Does not get bored with what he/she is doing. 1 2 3 4 5 6 7

24. Able to set goals to do a better job. 1 2 3 4 5 6 7

25. Helps new workers. 1 2 3 4 5 6 7

26. Able to work without supervision. 1 2 3 4 5 6 7

27. Able to keep good and complete records. 1 2 3 4 5 6 7

28. Says nice things about other people. 1 2 3 4 5 6 7

29. Uses available safety equipment and clothing. 1 2 3 4 5 6 7

30. Does not damage other people's property. 1 2 3 4 5 6 7

31. Makes corrections without complaining. 1 2 3 4 5 6 7

32. Works without looking out the window or at the clock. 1 2 3 4 5 6 7

33. Is accepting of new training. 1 2 3 4 5 6 7

	not important → 1 2 3 4 5 6 7 ← absolutely essential
34. Able to work well in a group.	1 2 3 4 5 6 7
35. Able to get along with new workers and supervisors.	1 2 3 4 5 6 7
36. Listens to instructions.	1 2 3 4 5 6 7
37. Demonstrates safe work habits.	1 2 3 4 5 6 7
38. Does not stay angry or upset all day.	1 2 3 4 5 6 7
39. Is not late for meetings.	1 2 3 4 5 6 7
40. Makes suggestions to save effort, time or materials.	1 2 3 4 5 6 7
41. Answers co-workers cheerfully.	1 2 3 4 5 6 7
42. Does not bother other people.	1 2 3 4 5 6 7
43. Remains in control of own anger and frustration.	1 2 3 4 5 6 7
44. Is willing to do more than the minimum required.	1 2 3 4 5 6 7
45. Demonstrates pride in the work he/she does.	1 2 3 4 5 6 7
46. Works hard to reach new goals.	1 2 3 4 5 6 7
47. Works hard when he/she runs into trouble.	1 2 3 4 5 6 7
48. Works hard even when no one is watching.	1 2 3 4 5 6 7
49. Able to keep own supplies in order.	1 2 3 4 5 6 7

	not important → 1 2 3 4 5 6 7 ← absolutely essential
50. Able to look forward to new assignments.	1 2 3 4 5 6 7
51. Does not complain about what he/she has to do.	1 2 3 4 5 6 7
52. Appears happy doing his/her job.	1 2 3 4 5 6 7
53. Has basic arithmetic skills.	1 2 3 4 5 6 7
54. Demonstrates initiative and imagination.	1 2 3 4 5 6 7
55. Able to get along well with a variety of people.	1 2 3 4 5 6 7
56. Is dependable.	1 2 3 4 5 6 7
57. Is punctual.	1 2 3 4 5 6 7
58. Able to use information, materials and equipment properly.	1 2 3 4 5 6 7
59. Maintains good health.	1 2 3 4 5 6 7
60. Knows what an employer expects.	1 2 3 4 5 6 7
61. Is loyal to employer.	1 2 3 4 5 6 7
62. Able to work under tension and pressure.	1 2 3 4 5 6 7
63. Able to organize the work activities of others.	1 2 3 4 5 6 7
64. Able to work without close supervision.	1 2 3 4 5 6 7
65. Able to manage time and materials efficiently.	1 2 3 4 5 6 7

not important → 1 2 3 4 5 6 7 ← absolutely essential

66. Able to make decisions on own. 1 2 3 4 5 6 7

67. Able to recite personal information such as name, phone number, and address upon request. 1 2 3 4 5 6 7

68. Able to complete previously learned repetitive tasks within normal limits. 1 2 3 4 5 6 7

69. Able to communicate basic needs such as: thirst, hunger, sickness, toileting necessities, etc. 1 2 3 4 5 6 7

70. Able to dress appropriately for work. 1 2 3 4 5 6 7

71. Able to move safely about workplace. 1 2 3 4 5 6 7

72. Remembers to respond to instructions requiring compliance after a specified time period. 1 2 3 4 5 6 7

73. Responds appropriately to verbal safety signals. 1 2 3 4 5 6 7

74. Initiates contact with supervisor when he/she cannot do job, runs out of necessary materials, or makes a mistake. 1 2 3 4 5 6 7

75. Initiates contact with co-worker when needing help on task. 1 2 3 4 5 6 7

76. Works without displaying or engaging in disruptive behaviors. 1 2 3 4 5 6 7

77. Able to reach place of work by own arrangement. 1 2 3 4 5 6 7

78. Has the desire to work for money. 1 2 3 4 5 6 7

79. Able to work without initiating unnecessary contact with strangers. 1 2 3 4 5 6 7

not important → 1 2 3 4 5 6 7 ← absolutely essential

80. Understands the purpose of money. 1 2 3 4 5 6 7

81. Follows instructions. 1 2 3 4 5 6 7

82. Able to learn new job tasks by watching others perform task. 1 2 3 4 5 6 7

83. Able to continue working without disruptions when supervisor or fellow workers are observing. 1 2 3 4 5 6 7

84. Washes hands after using restroom. 1 2 3 4 5 6 7

85. Participates in work environment for full work shift. 1 2 3 4 5 6 7

86. Works without initiating unnecessary contact with supervisor. 1 2 3 4 5 6 7

87. Able to learn new tasks to proficiency with only a few hours of instruction. 1 2 3 4 5 6 7

88. Works without initiating unnecessary contact with co-workers while they are working. 1 2 3 4 5 6 7

89. Able to tell time. 1 2 3 4 5 6 7

90. Able to work continuously without leaving work station inappropriately. 1 2 3 4 5 6 7

91. Able to learn new job tasks by verbal instructions. 1 2 3 4 5 6 7

92. Able to work on own. 1 2 3 4 5 6 7

93. Able to adapt to new work routine with a minimum number of supervisory contacts. 1 2 3 4 5 6 7

94. Does not request or take time off from work without good cause. 1 2 3 4 5 6 7

not important → 1 2 3 4 5 6 7 ← absolutely essential

95. Does not take extra breaks during work. 1 2 3 4 5 6 7

96. Demonstrates basic skill in reading. 1 2 3 4 5 6 7

97. Does not verbally abuse or insult co-workers. 1 2 3 4 5 6 7

98. Joins co-workers for breaks. 1 2 3 4 5 6 7

99. Does not steal from co-workers or employer. 1 2 3 4 5 6 7

100. Accepts responsibility for own work performance. 1 2 3 4 5 6 7

101. Demonstrates basic competence in written and spoken language. 1 2 3 4 5 6 7

102. Practices courtesy in all on-the-job situations. 1 2 3 4 5 6 7

103. Talks respectfully to employers, supervisors and co-workers. 1 2 3 4 5 6 7

104. Reacts appropriately with co-workers of opposite sex. 1 2 3 4 5 6 7

105. Avoids socially unacceptable language in the workplace. 1 2 3 4 5 6 7

106. Able to count and make change. 1 2 3 4 5 6 7

107. Demonstrates good attendance at work. 1 2 3 4 5 6 7

108. Notifies supervisor of intended absence from work or if necessary to leave work station. 1 2 3 4 5 6 7

109. Punches time card correctly. 1 2 3 4 5 6 7

110. "Punches in" on ti

not important → 1 2 3 4 5 6 7 ← absolutely essential

111. "Punches out" at end of shift. 1 2 3 4 5 6 7

112. Returns from breaks on time. 1 2 3 4 5 6 7

113. Sets up own work station correctly. 1 2 3 4 5 6 7

114. Secures necessary work materials. 1 2 3 4 5 6 7

115. Keeps supplied with work materials as job progresses. 1 2 3 4 5 6 7

116. Remains at work station as required. 1 2 3 4 5 6 7

117. Seeks necessary supervision or assistance. 1 2 3 4 5 6 7

118. Cleans own work station. 1 2 3 4 5 6 7

119. Participates in area cleanup. 1 2 3 4 5 6 7

120. Follows safety rules and procedures. 1 2 3 4 5 6 7

121. Follows area schedules. 1 2 3 4 5 6 7

122. Responds to criticism without work disruptive results. 1 2 3 4 5 6 7

123. Responds to instructions without work disruptive results. 1 2 3 4 5 6 7

124. Able to follow instructions *with* demonstration. 1 2 3 4 5 6 7

125. Able to follow instructions *without* demonstration. 1 2 3 4 5 6 7

126. Able to work without interrupting co-workers. 1 2 3 4 5 6 7

not important → 1 2 3 4 5 6 7 ← absolutely essential

127. Attends to task. 1 2 3 4 5 6 7

128. Completes assigned tasks. 1 2 3 4 5 6 7

129. Stays awake at work station. 1 2 3 4 5 6 7

130. Demonstrates job flexibility. 1 2 3 4 5 6 7

131. Demonstrates appropriate grooming and personal hygiene. 1 2 3 4 5 6 7

132. Demonstrates adequate rate of production. 1 2 3 4 5 6 7

133. Demonstrates adequate consistency of production. 1 2 3 4 5 6 7

134. Demonstrates adequate quality of production. 1 2 3 4 5 6 7

135. Demonstrates adequate economy of time/motion on the job. 1 2 3 4 5 6 7

NOTE: The information given on this page will be held in STRICTEST CONFIDENCE.

NAME OF RESPONDENT: ______________________________

OFFICE TELEPHONE: ______________________________

POSITION/JOB TITLE: ______________________________

NUMBER OF YEARS THAT YOU HAVE WORKED IN REHABILITATION: __________

NAME OF AGENCY OR PROGRAM: ______________________________

MAIN TYPE OF CLIENT (Check one only):

_____ PHYSICALLY DISABLED

_____ MENTALLY RETARDED

_____ MENTALLY ILL

_____ HEAD INJURED

_____ OTHER

NUMBER OF CLIENTS IN PROGRAM: ______________________________

THANK YOU FOR YOUR COOPERATION.

APPENDIX E.

Three Independent Sorts of ESSI Items Into Skill Clusters

	Skill Cluster	ITEM No.	Sorter 1	Sorter 2	Sorter 3
	1	a49	1	1	1
2	1	a50	1	1	1
3	1	b21	4	1	1
4	1	b50	1	1	1
5	1	b51	1	1	1
6	2	a39	2	2	2
7	2	a40	2	2	2
8	2	b41	2	2	2
9	2	b42	2	2	2
10	3	a17	3	4	9
11	3	a18	3	3	3
12	3	a46	3	3	3
13	3	a47	3	3	3
14	3	a48	3	3	3
15	3	b26	3	3	3
16	3	b48	3	3	3
17	3	b49	3	3	3
18	4	a16	9	4	4
[illegible]	4	a54	4	4	4
20	4	b18	4	4	4
21	4	b19	4	4	4
22	4	b20	4	4	4
23	4	b23	4	4	9
24	5	a30	5	5	5
25	5	a31	5	5	5
26	5	a42	5	5	5
27	5	a43	5	5	5
28	5	b32	5	12	5
29	5	b33	5	5	5
30	5	b45	5	5	5
31	6	a44	6	5	6
32	6	a45	6	6	6
33	6	b46	6	6	6
34	6	b47	6	6	6
35	7	a33	7	7	7
36	7	a35	7	7	7
[illegible]	7	b35	7	7	7
38	7	b36	7	7	7
39	7	b37	7	7	7
40	8	a28	8	8	8
41	8	a29	8	8	3
42	8	a32	8	8	8

	Skill Cluster	ITEM No.	Sorter 1	Sorter 2	Sorter 3
	8	b52	8	8	8
44	9	a19	9	9	9
45	9	a20	9	9	9
46	9	a22	9	9	9
47	9	a36	9	9	9
48	9	a37	9	9	9
49	9	a38	9	9	9
50	9	a41	9	3	9
51	9	b8	9	9	6
52	9	b9	9	9	9
53	9	b25	9	9	5
54	9	b40	9	9	13
55	9	b43	9	9	9
56	9	b54	9	3	9
57	10	a24	10	10	10
58	10	b24	10	10	10
59	10	b29	10	10	10
60	10	b30	10	10	10
[illegible]	10	b31	5	10	10
62	10	b34	10	10	9
63	11	a4	11	11	11
64	11	a5	11	11	11
65	11	a6	11	6	11
66	11	a7	11	11	11
67	11	a23	11	11	13
68	11	a26	11	11	11
69	11	b4	11	11	11
70	11	b5	11	11	11
71	11	b6	11	11	11
72	11	b7	11	11	11
73	12	a1	12	12	12
74	12	a2	12	12	12
75	12	a3	12	12	12
76	12	a8	12	12	12
77	12	a9	12	12	9
78	12	a21	12	12	12
[illegible]	12	a27	12	9	9
80	12	a34	12	12	13
81	12	b1	12	12	6
82	12	b2	12	12	12
83	12	b3	12	12	12
84	12	b22	12	12	4

	Skill Cluster	ITEM No.	Sorter 1	Sorter 2	Sorter 3
	12	b27	12	12	12
86	12	b28	12	5	5
87	12	b38	12	12	12
88	12	b39	9	9	12
89	12	b44	12	12	6
90	13	a10	13	13	13
91	13	a11	13	13	8
92	13	a12	13	13	13
93	13	a13	13	13	13
94	13	a14	13	13	13
95	13	a15	13	13	13
96	13	a25	13	13	13
97	13	a51	9	13	13
98	13	a52	9	13	13
99	13	a53	13	13	13
100	13	b10	13	13	13
101	13	b11	13	13	13
102	13	b12	13	13	13
1(	13	b13	13	13	13
104	13	b14	13	13	13
105	13	b15	13	13	13
106	13	b16	13	13	13
107	13	b17	13	13	9
108	13	b53	13	13	13

APPENDIX F.

Employment Survival Skills Standards Survey

EMPLOYMENT SURVIVAL SKILLS
Standards Survey©
Western Industrial Research & Training Centre

The purpose of this survey is to obtain information on employers' tolerance for selected work behaviors and employee characteristics that are commonly seen as having a negative relationship to employment survival. This survey is to be completed as a follow-up to the *Employment Survival Skills Inventory*. Please answer all questions carefully and completely. Your responses will be held in strictest confidence.

As you may recall, on the *Employment Survival Skills Inventory* you chose to rate the importance of work skills to the occupation of:

____

Please answer all of the following questions with respect to **this occupation ONLY** and return the completed survey in the postage-paid envelope provided.

1. a) Does your company have a formal probation period policy for new employees?
   yes ( ) no ( ) don't know ( )
   b) If yes to 1 a), how many weeks long is this formal probation period?
   __________ week(s)
   c) On average, what percent of new employees fail to complete their formal probation?
   less than 10% ( ) 10% to 30% ( ) more than 30% ( )

2. Without regard to the company's formal probation period, how many weeks is generally allowed for a new employee to FULLY come up to the production standards and work expectations for this job ?
   __________ week(s)

3. On average, how many months do employees remain in this job before leaving either through promotion, resignation, or termination?
   __________ month(s)

4. a) List 5 work skills or employee characteristics that you believe are essential to success in this job:
   1. ______________________
   2. ______________________
   3. ______________________
   4. ______________________
   5. ______________________

4. b) List the 5 most common reasons for terminating employees in this job:
   1. ______________________
   2. ______________________
   3. ______________________
   4. ______________________
   5. ______________________

On the pages that follow you will find listed 94 work skill or employee character deficits that may lead to job failure and employee termination. For the occupation of: ______________________ during the period allowed for new employees to come up to standard (see your response to question #2 above), please rate each item on the following three dimensions:

1. The number of violations permissable before you would terminate the employee.
If the item is not relevant to the job, mark NA in the box to its right.

2. The frequency with which such a violation GENERALLY occurs with new employees during this start-up period.

3. How serious you **PERSONALLY** would view such a violation.

EXAMPLE

	Violations	Frequency					Seriousness				
		NEVER				ALWAYS	NOT SERIOUS				EXTREMELY SERIOUS
A. SAFETY ON THE JOB.											
a1 Fails to follow safety rules or procedures.	1	1	[✓ 2]	3	4	5	1	2	3	4	[✓ 5]
a2 Demonstrates unsafe work habits or engages in unsafe behavior.	2	1	[✓ 2]	3	4	5	1	2	3	4	[✓ 5]
a3 Demonstrates lack of proper attention in dangerous work areas.	2	1	2	3	[✓ 4]	5	1	2	3	[✓ 4]	5

	Violations	Frequency					Seriousness				
		NEVER				ALWAYS	NOT SERIOUS				EXTREMELY SERIOUS
A. SAFETY ON THE JOB.											
a1 Fails to follow safety rules or procedures.	☐	1	2	3	4	5	1	2	3	4	5
a2 Demonstrates unsafe work habits or engages in unsafe behavior.	☐	1	2	3	4	5	1	2	3	4	5
a3 Demonstrates lack of proper attention in dangerous work areas.	☐	1	2	3	4	5	1	2	3	4	5
a4 Responds inappropriately to safety-related verbal signals or posted signs.	☐	1	2	3	4	5	1	2	3	4	5
B. ATTENDANCE & PUNCTUALITY.											
b1 Absent from work without good cause.	☐	1	2	3	4	5	1	2	3	4	5
b2 Fails to notify of intended absence in advance.	☐	1	2	3	4	5	1	2	3	4	5
b3 Late for work.	☐	1	2	3	4	5	1	2	3	4	5
b4 Fails to return from breaks on time.	☐	1	2	3	4	5	1	2	3	4	5
C. DEPENDABILITY, RELIABILITY, ABILITY TO WORK UNSUPERVISED.											
c1 Falls asleep at work station.	☐	1	2	3	4	5	1	2	3	4	5
c2 Fails to complete assigned tasks.	☐	1	2	3	4	5	1	2	3	4	5
c3 Fails to complete work on time.	☐	1	2	3	4	5	1	2	3	4	5
c4 Fails to initiate contact with supervisor when problem arises or when requiring assistance.	☐	1	2	3	4	5	1	2	3	4	5
c5 Fails to remain attentive to task at hand.	☐	1	2	3	4	5	1	2	3	4	5
c6 Fails to remain at work station as required or leaves without notifying supervisor.	☐	1	2	3	4	5	1	2	3	4	5
c7 Requires extra supervision on routine job tasks.	☐	1	2	3	4	5	1	2	3	4	5
c8 Unable to make simple job-related decisions on own.	☐	1	2	3	4	5	1	2	3	4	5
D. APPEARANCE, HYGIENE, HEALTH											
d1 Lacks physical stamina necessary to participate in the work environment for a full work-day.	☐	1	2	3	4	5	1	2	3	4	5
d2 Fails to maintain good health and comes to work while ill.	☐	1	2	3	4	5	1	2	3	4	5
d3 Demonstrates unacceptable personal hygiene.	☐	1	2	3	4	5	1	2	3	4	5
d4 Demonstrates unacceptable grooming.	☐	1	2	3	4	5	1	2	3	4	5
d5 Fails to wash hands after using the toilet.	☐	1	2	3	4	5	1	2	3	4	5
d6 Dresses inappropriately for work.	☐	1	2	3	4	5	1	2	3	4	5
E. WORK ATTITUDE, WORK ETHIC, COMMITMENT TO THE JOB.											
e1 Attempts to avoid work or cut corners.	☐	1	2	3	4	5	1	2	3	4	5
e2 Fails to work hard when not watched.	☐	1	2	3	4	5	1	2	3	4	5
e3 Fails to complete work that he/she perceives as boring.	☐	1	2	3	4	5	1	2	3	4	5
e4 Refuses to accept responsibility for own work performance.	☐	1	2	3	4	5	1	2	3	4	5
e5 Leaves work incomplete for others to finish.	☐	1	2	3	4	5	1	2	3	4	5
e6 Requests time off from work without good cause.	☐	1	2	3	4	5	1	2	3	4	5
e7 Demonstrates lack of loyalty to employer.	☐	1	2	3	4	5	1	2	3	4	5
e8 Demonstrates lack of pride in the work he/she does.	☐	1	2	3	4	5	1	2	3	4	5
e9 Takes unauthorized or extra long breaks during work.	☐	1	2	3	4	5	1	2	3	4	5
e10 Complains about the work he/she is expected to do.	☐	1	2	3	4	5	1	2	3	4	5
e11 Demonstrates lack of motivation or a negative attitude toward work.	☐	1	2	3	4	5	1	2	3	4	5
e12 Fails to work harder or faster to finish a job when asked to do so.	☐	1	2	3	4	5	1	2	3	4	5
e13 Unwilling to do more than the minimum required by the job.	☐	1	2	3	4	5	1	2	3	4	5
e14 Unwilling to try attaining new or more challenging work goals.	☐	1	2	3	4	5	1	2	3	4	5
e15 Fails to demonstrate adequate initiative or imagination on the job.	☐	1	2	3	4	5	1	2	3	4	5

		Violations	Frequency					Seriousness				
			NEVER				ALWAYS	NOT SERIOUS				EXTREMELY SERIOUS
F. FOLLOWING RULES, INSTRUCTIONS, SCHEDULES.												
f1	Fails to carry out instructions requiring immediate compliance.	☐	1	2	3	4	5	1	2	3	4	5
f2	Fails to follow company rules or policy.	☐	1	2	3	4	5	1	2	3	4	5
f3	Fails to follow area or daily work schedules.	☐	1	2	3	4	5	1	2	3	4	5
f4	Fails to carry out instructions requiring delayed compliance.	☐	1	2	3	4	5	1	2	3	4	5
f5	Cannot follow routine instructions without detailed demonstration or clarification.	☐	1	2	3	4	5	1	2	3	4	5
G. EMOTIONAL & BEHAVIORAL SELF-CONTROL												
g1	Engages in work disruptive outbursts (e.g. yelling, crying, tantrums).	☐	1	2	3	4	5	1	2	3	4	5
g2	Outwardly shows anger & frustration.	☐	1	2	3	4	5	1	2	3	4	5
g3	Remains angry or upset all day once set off.	☐	1	2	3	4	5	1	2	3	4	5
g4	Unable to remain calm under relatively routine job pressures.	☐	1	2	3	4	5	1	2	3	4	5
H. PRODUCTION EFFICIENCY, QUANTITY, QUALITY, CONSISTENCY.												
h1	Fails to meet minimum standards for rate or quality of production or work output.	☐	1	2	3	4	5	1	2	3	4	5
h2	Fails to meet minimum standards for consistency of production or work output.	☐	1	2	3	4	5	1	2	3	4	5
h3	Fails to complete previously learned repetitive tasks within normal limits of speed & quality.	☐	1	2	3	4	5	1	2	3	4	5
h4	Demonstrates poor economy of time/motion on the job.	☐	1	2	3	4	5	1	2	3	4	5
I. EMOTIONAL RESPONSE TO SUPERVISION OR CRITICISM.												
i1	Responds to instructions in a manner that is work disruptive (e.g. arguing, talking back).	☐	1	2	3	4	5	1	2	3	4	5
i2	Complains when requested by supervisor to make corrections.	☐	1	2	3	4	5	1	2	3	4	5
i3	Responds to criticism in a manner that is work disruptive (e.g., arguing, talking back).	☐	1	2	3	4	5	1	2	3	4	5
i4	Unable to continue working without disruption or distraction when supervisor or coworker is observing.	☐	1	2	3	4	5	1	2	3	4	5
J. WORK-RELATED INTERPERSONAL & SOCIAL SKILLS.												
j1	Engages in minor theft (under $50) from employer or coworker.	☐	1	2	3	4	5	1	2	3	4	5
j2	Engages in major theft (over $200) from employer or coworker.	☐	1	2	3	4	5	1	2	3	4	5
j3	Through carelessness, damages coworker's or employer's property while working.	☐	1	2	3	4	5	1	2	3	4	5
j4	Through carelessness, damages customer's property while working.	☐	1	2	3	4	5	1	2	3	4	5
j5	Verbally abuses or insults coworkers.	☐	1	2	3	4	5	1	2	3	4	5
j6	Behaves inappropriately toward coworkers of opposite sex (e.g. sexist comments, rude gestures, harassment).	☐	1	2	3	4	5	1	2	3	4	5
j7	Refuses to help coworkers when asked.	☐	1	2	3	4	5	1	2	3	4	5
j8	Fails to practice proper courtesy toward others while on the job.	☐	1	2	3	4	5	1	2	3	4	5
j9	Fails to get along with supervisor or coworkers.	☐	1	2	3	4	5	1	2	3	4	5
j10	Uses socially unacceptable or nasty language in the workplace.	☐	1	2	3	4	5	1	2	3	4	5
j11	Bothers or pesters others in the workplace.	☐	1	2	3	4	5	1	2	3	4	5
j12	Interrupts others' work while doing own job.	☐	1	2	3	4	5	1	2	3	4	5
j13	Fails to speak in a cheerful & positive manner with coworkers or public.	☐	1	2	3	4	5	1	2	3	4	5
j14	Makes unnecessary contact with coworkers or supervisor while working.	☐	1	2	3	4	5	1	2	3	4	5

	Violations	Frequency					Seriousness				
		NEVER				ALWAYS	NOT SERIOUS				EXTREMELY SERIOUS
j15 Makes unnecessary contact with members of the public while working.	☐	1	2	3	4	5	1	2	3	4	5
j16 Fails to express appreciation to coworkers.	☐	1	2	3	4	5	1	2	3	4	5
j17 Fails to work well in a group.	☐	1	2	3	4	5	1	2	3	4	5
j18 Fails to join coworkers during breaks.	☐	1	2	3	4	5	1	2	3	4	5

K. ADAPTABILITY, FLEXIBILITY & LEARNING PROFICIENCY.

k1 Unaccepting of new training.	☐	1	2	3	4	5	1	2	3	4	5
k2 Resistant to making changes to avoid further errors.	☐	1	2	3	4	5	1	2	3	4	5
k3 Demonstrates lack of flexibility on the job.	☐	1	2	3	4	5	1	2	3	4	5
k4 Unable to learn new job tasks by verbal instruction alone.	☐	1	2	3	4	5	1	2	3	4	5
k5 Unable to learn new job tasks by watching others perform tasks.	☐	1	2	3	4	5	1	2	3	4	5
k6 Unable to adapt to new work routines without more than the usual number of supervisory contacts.	☐	1	2	3	4	5	1	2	3	4	5

L. BASIC PREVOCATIONAL & PRACTICAL SKILLS.

l1 Unable to reach place of work by own arrangement.	☐	1	2	3	4	5	1	2	3	4	5
l2 Punches time card incorrectly.	☐	1	2	3	4	5	1	2	3	4	5
l3 Unable to communicate basic needs such as: thirst, hunger, sickness, or toileting necessities.	☐	1	2	3	4	5	1	2	3	4	5
l4 Demonstrates lack of basic skill in reading & speaking.	☐	1	2	3	4	5	1	2	3	4	5
l5 Cannot tell time from a watch or clock.	☐	1	2	3	4	5	1	2	3	4	5
l6 Unable to recite basic personal information such as: name, telephone number, address upon request.	☐	1	2	3	4	5	1	2	3	4	5
l7 Demonstrates lack of basic skill in arithmetic or counting.	☐	1	2	3	4	5	1	2	3	4	5

M. ABILITY TO ORGANIZE & EFFECTIVELY MANAGE INFORMATION, PEOPLE OR THINGS.

m1 Fails to use information, materials or equipment properly.	☐	1	2	3	4	5	1	2	3	4	5
m2 Fails to properly care for equipment.	☐	1	2	3	4	5	1	2	3	4	5
m3 Fails to clean own work station or participate in work area clean-up.	☐	1	2	3	4	5	1	2	3	4	5
m4 Unable to manage time or materials in an efficient manner.	☐	1	2	3	4	5	1	2	3	4	5
m5 Fails to keep own supplies in order.	☐	1	2	3	4	5	1	2	3	4	5
m6 Fails to set up own work station correctly.	☐	1	2	3	4	5	1	2	3	4	5
m7 Fails to secure necessary work materials or keep supplied with necessary materials as work progresses.	☐	1	2	3	4	5	1	2	3	4	5
m8 Fails to maintain good and complete records pertaining to the job.	☐	1	2	3	4	5	1	2	3	4	5
m9 Demonstrates inability to organize the work of others.	☐	1	2	3	4	5	1	2	3	4	5

DEMOGRAPHIC INFORMATION

Name ______________________________ Sex __________ Age __________

Job title or position in company ______________________________

Years in present position ______________ Do you directly supervise workers? yes (   ) no (   )

Name of your company ______________________________

Thank you for your time and help in our research. If you wish to receive a short report of results upon completion of our research, please attach your business card here.

APPENDIX G.

Study Two Covering Letter Signed by Researcher

TO THE SURVEY RESPONDENT: A few words before you begin.

This brief questionnaire is the second half of a major research effort to update available information on basic skills required for employment success in entry-level occupations. In our earlier survey of Alberta employers we asked what skills were most important for job survival. Now we are attempting to determine industry standards for these important skills.

The EMPLOYMENT SURVIVAL SKILLS STANDARDS SURVEY lists 94 employment skills deficits and asks you to specify how many times a new employee could show each deficit before being terminated. As well, the Survey asks you to rate how common each deficit is among new employees generally, and how serious you personally view each deficit to be.

Completing the Survey should require only about 15-20 minutes, yet your responses will be invaluable to our efforts to improve our employment training programs for vocationally handicapped adults. Your responses will be held strictly confidential. No one in your firm or at WIRTC who is not directly associated with processing and computerizing the survey data will have access to your responses, nor will they ever receive any information supplied by individual survey respondents. Only grouped data will be used for our research reports.

Please read the Survey instructions carefully before responding to any questions. When you have completed the questionnaire, please seal it in the postage-paid return envelope provided and mail it at your earliest convenience.

Thank you for your time and cooperation.

Sincerely,

Horst H. Mueller, M.A., C. Psych.
Associate Director for Research & Development

HHM/gls

APPENDIX H.

Occupations Description Sheet

The following are descriptions of the eight occupations listed on the first page of this inventory. These descriptions are general occupational descriptions taken from the Canadian Classification and Dictionary of Occupations and are to be used to help you decide whether or not your firm hires persons into one or more of the eight occupations listed.

KITCHEN HELPER: Helps to maintain kitchen work areas and restaurant equipment and utensils in clean and orderly condition. May perform various duties such as: Washes floors, walls, worktables, appliances, and cutting blocks. Removes trash and garbage. Washes pots, pans and trays by hand. Scrapes food from dishes and stacks them for dishwasher. May sometimes operate dishwasher. Transfers supplies and equipment between storage and work areas. May wash and peel fruit and vegetables.

LAUNDRY LABOURER: Prepares laundry for processing and distributes laundry to marking and classification stations. May perform various duties such as: Weighing and sorting, attaching identification tags, moistening clean wash preparatory to ironing, and loading and unloading washing machines and extractors, stacking linen supplies on storage room shelves. May unload soiled linen from trucks and load clean laundry.

MATERIAL HANDLER, GENERAL: Loads, unloads, conveys, stores, and distributes materials and objects within plant, store, warehouse, or other establishments, performing various duties such as: Places and removes materials onto or from trucks, pallets, shelves, conveyors, furnaces, and machines. Opens containers. Transports materials from one area to another either manually or mechanically. Installs strapping, bracing, or padding to prevent damage of materials or equipment in transit. Removes, labels, and identifies materials. Counts and weighs materials. May operate mechanical devices such as conveyors, industrial forklifts and trucks to convey materials from one area to another. May assist in routine maintenance of equipment.

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GENERAL LABOURER, ASSEMBLY: Assembles small mechanical, electrical, or other types of products by performing various duties such as: Positions parts in specified relationship to each other. Fastens parts together using hand or powered tools. Uses previously set-up machines, such as arbor presses, punch presses, taps, spot welding machines or riveting machines to fasten, force fit, or trim excess material on assembly line. Examines components, using fixed gauges or test devices. Tests effectiveness of mechanisms, using a variety of simple tests. May be assigned to various work stations according to production requirements or to reduce fatigue factors. May specialize in the assembly of a certain part.

OFFICE BOY/GIRL: Performs any combination of the following duties in government office or business office of a commercial or industrial establishment: Furnishes staff with clerical supplies, sorts incoming mail for distribution and dispatches outgoing mail, distributes office paperwork and memos between departments. May also operate office machines such as duplicating or shredding machines.

CLEANER, COMMERCIAL & INDUSTRIAL: Keeps hotel, office buildings, apartment buildings, and industrial establishments in clean and orderly condition by performing various duties such as: Tends furnace and boiler. Cleans hallways, stairways, and office floors. Cleans alleys, aisles, or work areas around machines. Uses both power and hand cleaning equipment. Cleans dust and dirt from office and shop equipment. Washes windows. Vacuums carpets and polishes furniture. Polishes metal fixtures and fittings. Keeps lavatories clean and tidy, and replenishes expendable supplies. Empties waste baskets and trash bins. May mow lawns, trim shrubbery and maintain sidewalks and walkways. May arrange boxes, material, and handtrucks or other industrial equipment in neat and orderly manner. May carry out routine maintenance work; such as, painting, minor electrical repairs, carpentry, and plumbing. Frequently works in evenings after daytime employees have left premises.

COUNTERMAN, FASTFOOD & CAFETERIA: Serves food to customers from behind counter. Calls customer orders to kitchen staff. Picks up and serves order when ready. Accepts payment or may make up itemized check for service. Performs other duties, such as cleaning counters, tables, restaurant floors, taking out trash, replenishing condiments and expendable supplies such as straws, napkins, stir-sticks. May also wash dishes or sell cigars and cigarettes. May prepare sandwiches, salads, beverages and other short order items.

CONSTRUCTION/TRADESMAN HELPER: Helps skilled craft workers engaged in constructing or repairing buildings, roads, bridges, sewer and water facilities and other construction projects by performing various routine and essentially manual duties such as: Conveying and holding tools, using hand or small power tools in a helping capacity, transporting materials, tools and supplies to and from and about the worksite, mixing materials, and carrying out clean-up tasks.